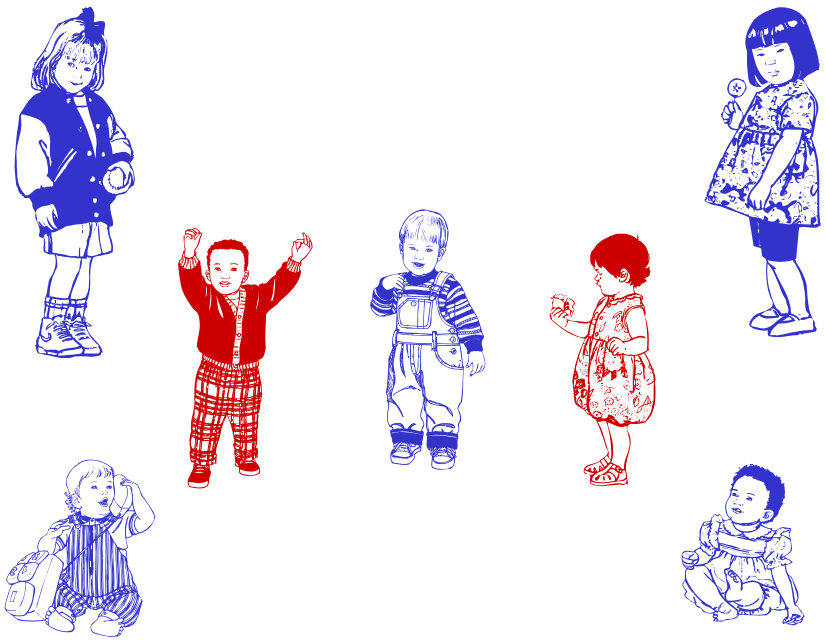
STATE OF IOWA



STATEWIDE PLAN FOR CHILDHOOD BLOOD LEAD TESTING JANUARY 2001

Revised January 2004

CHILDHOOD LEAD POISONING IN IOWA BACKGROUND INFORMATION

EFFECTS OF CHILDHOOD LEAD POISONING ON INDIVIDUAL AND COMMUNITY HEALTH

Lead has adverse effects on nearly all organ systems in the body. It is especially harmful to the developing brains and nervous systems of children under the age of 6 years. At very high blood lead levels, children can have severe brain damage or even die. At blood lead levels as low as 10 micrograms per deciliter (µg/dL), children's intelligence, hearing, and growth are affected. This damage can be stopped if a child's lead exposure is reduced. However, the damage cannot be reversed. A child is considered to be lead-poisoned at a blood lead level of 10 µg/dL. The Centers for Disease Control and Prevention (CDC) chose this level because it is the level at which health effects can start to become significant. In addition, at this level, CDC recommends that action be taken to keep the blood lead level from increasing.

A number of studies have estimated that a child's IQ will drop by one to three points for every increase of 10 µg/dL in the child's blood lead level. In a community, the presence of lead-poisoned children can be associated with an increase in the number of children with developmental deficits and learning disorders. This places an unnecessary and expensive burden on the educational system. The presence of lead-poisoned children also requires substantial community public health resources for medical and environmental case management services.

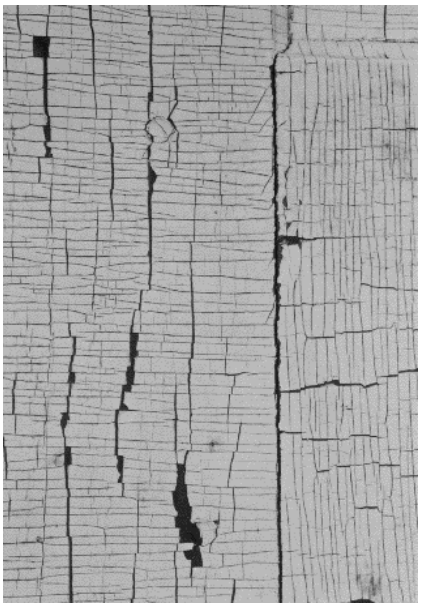
In 2002, researchers estimated that the average decrease in lifetime earnings of a child with a blood lead level of 10 µg/dL would be at least $40,000 and that the average decrease for a child with a blood lead level of 10 µg/dL would be at least $80,000. (Environmental Pollutants and Disease in American Children: Estimates of Morbidity, Morality, and Costs for Lead Poisoning, Asthma, Cancer, and Developmental Disabilities. PJ Landrigan, DB Schechter, JM Lipton, MC Fahs, and J Schwartz. Environmental Health Perspectives, Volume 110, Number 7: 721-728.)

DEMOGRAPHIC FACTORS AFFECTING CHILDHOOD LEAD POISONING

The two major demographic factors affecting childhood lead poisoning in a given area are:

- The percentage of pre-1950 housing and
- The percentage of children living in poverty.

Iowa's children are most commonly poisoned by lead-based paint found in homes built before 1950. Lead-based paint in a home becomes a lead hazard as it deteriorates and lead-based paint chips end up on the floors and in window wells throughout the home as well as in the soil around the exterior of a home. The paint chips also crumble and become part of the dust on the floors and window troughs. These homes are considered to have lead-based paint throughout.



Deteriorated lead-based paint.

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Young children who live in these homes become lead-poisoned when they put paint chips or exterior soil in their mouths or when they get house dust and soil on their hands and put their hands in their mouths. Data from inspections done by the IDPH and local childhood lead poisoning prevention programs (CLPPPs) show that virtually all pre-1950 homes in Iowa contain lead hazards. Housing data from the 2000 census show that 39.3 percent of Iowa's housing (488,375 units) was built before 1950. This is substantially greater than the national average of 22.3 percent. When compared to the nation, Iowa ranks sixth in the percentage of housing built before 1950. The map on page 4 shows the percentage of pre-1950 housing in each county.

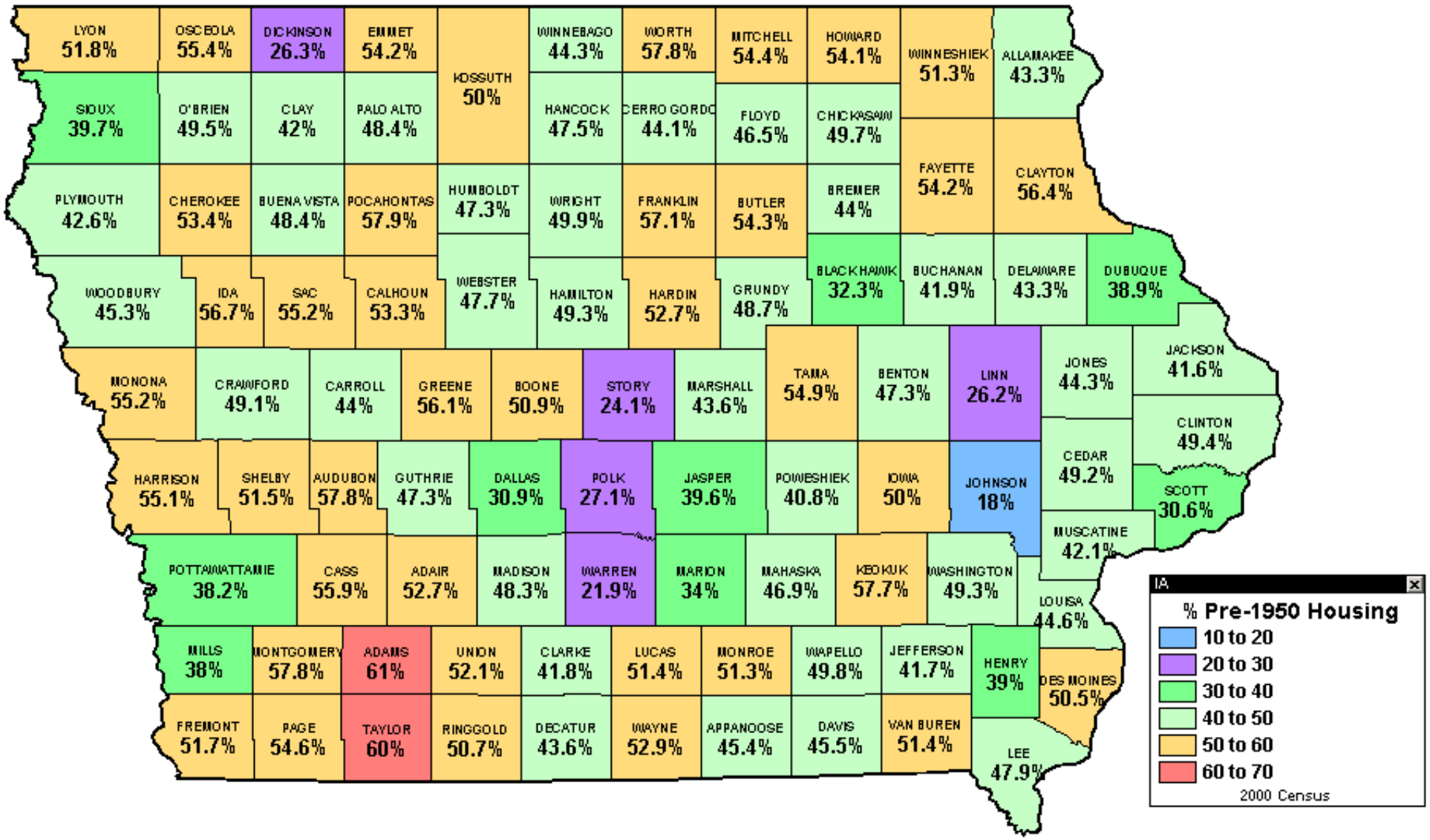
In areas where the rate of children living in poverty is high, pre-1950 housing is usually in poorer condition and contains more lead-based paint hazards than such housing in areas where the child poverty rate is lower. Seventeen percent of Iowa's children under the age of 6 years live in poverty. The map on page 5 shows the percentage of children under the age of 6 years living in poverty in each county. The rate of childhood lead poisoning among children correlates highly with the percentage of pre-1950 housing and the percentage of children living in poverty.

PREVALENCE OF CHILDHOOD LEAD POISONING IN IOWA

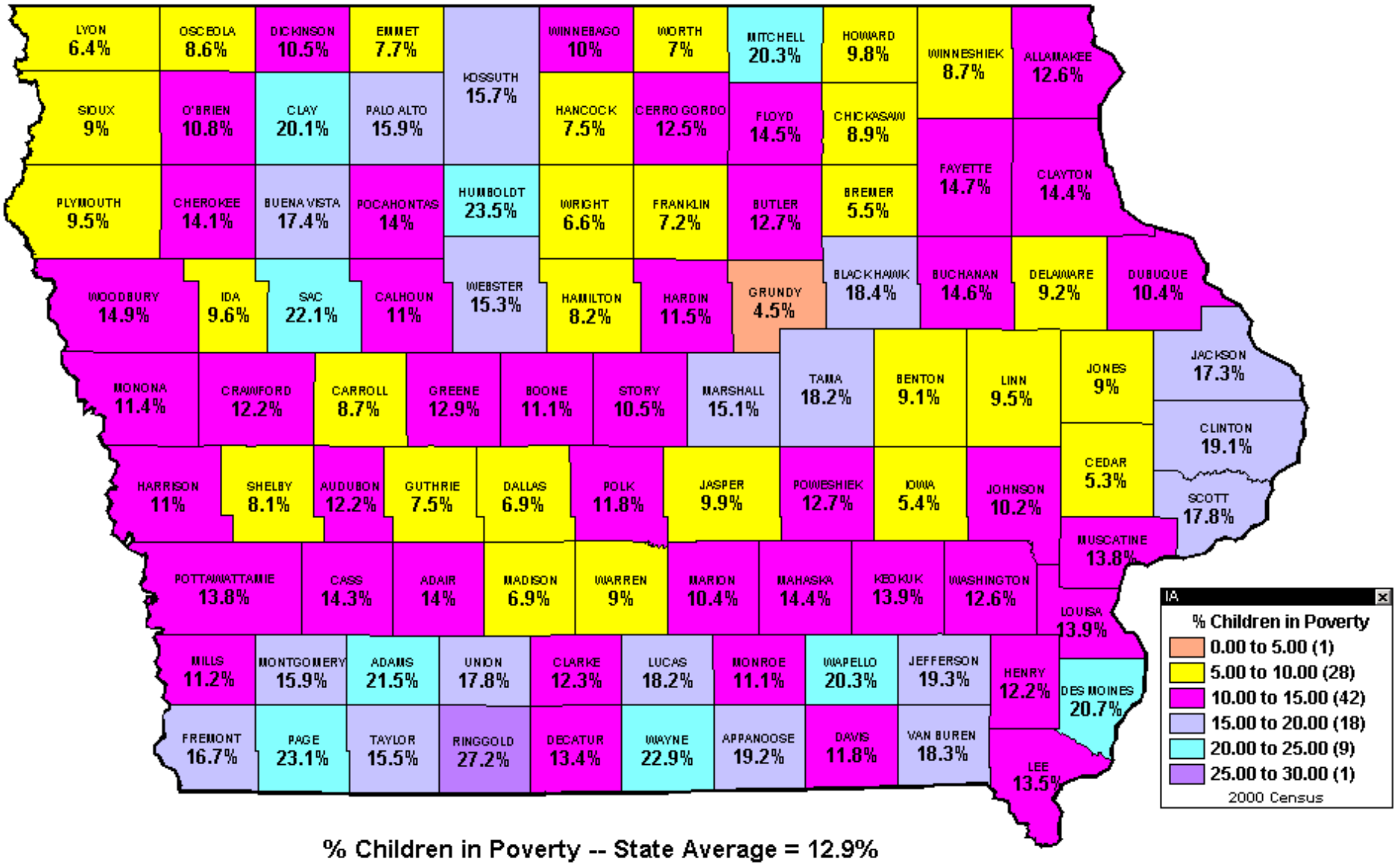
Children are identified as lead-poisoned through a blood test. Since 1992, the IDPH has recommended that all children under the age of six years be tested for lead poisoning. In addition, state and federal laws require that all children covered by Medicaid be tested for lead poisoning.

The Iowa Department of Public Health reports the rate of blood lead testing among children and the prevalence of lead poisoning by birth cohort. A birth cohort is a group of children born during a given time period.

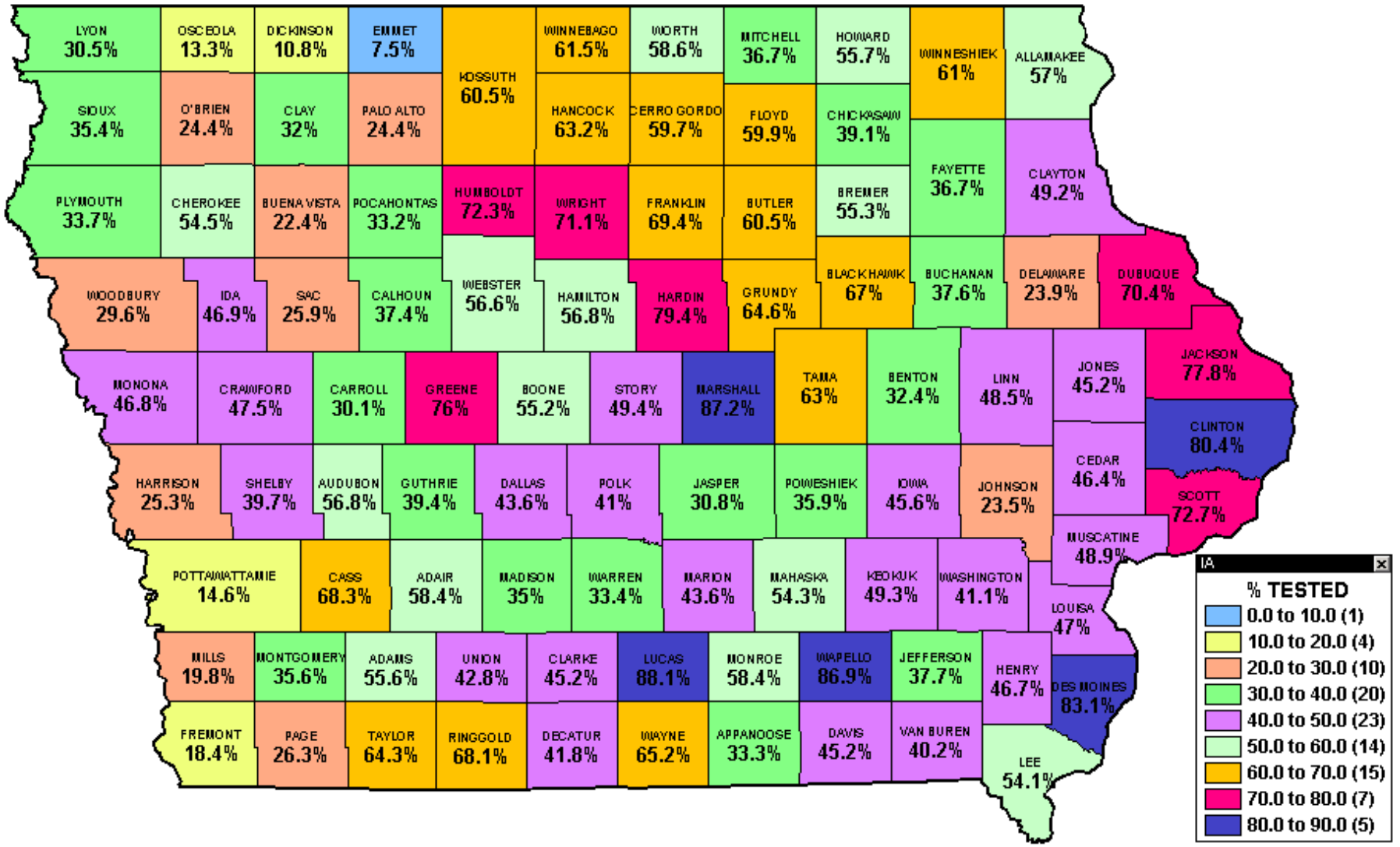
Among the group of children born from January 1, 1995 through December 31, 1997, 48.3 percent had at least one blood lead test before the age of 6 years. Statewide, the prevalence of elevated blood lead levels among this group of children was 9.4 percent. This is more than four times the national average of 2.2 percent. The map on page 6 shows county data for the percentage of children born in 1995 through 1997 who received at least one blood lead test before the age of 6 years. The map on page 7 shows county data for the percentage of these children who were identified as lead-poisoned.



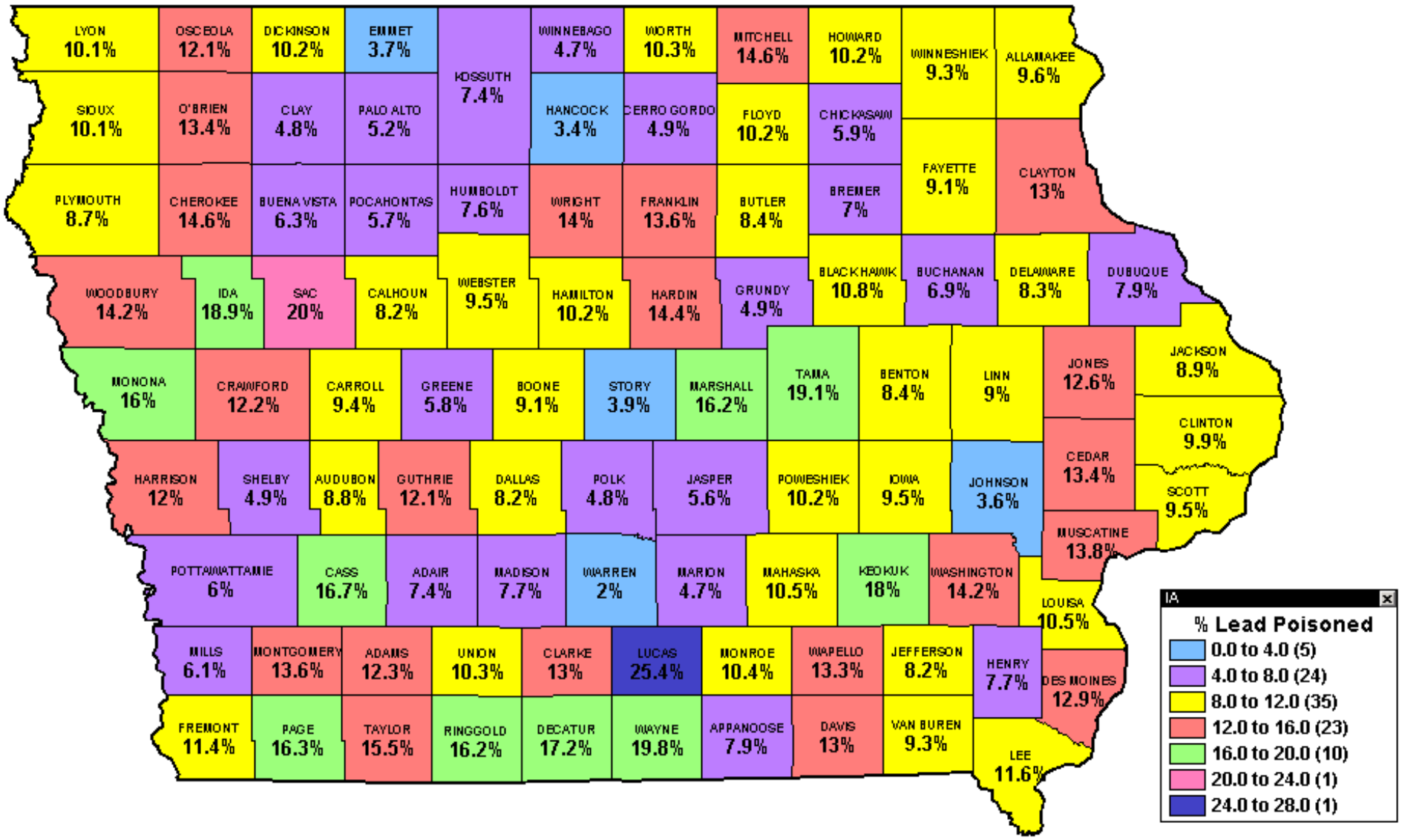
% Pre-1950 Housing -- State Average = 39.3%



% Children in Poverty -- State Average = 12.9%



% Children Born in 1995-1997 and Tested for Lead Poisoning -- State Average = 48.3%



% Children Born in 1995-1997 Tested and Identified as Lead Poisoned -- State Average = 9.4%

IOWA DEPARTMENT OF PUBLIC HEALTH'S ROLE IN CHILDHOOD LEAD POISONING PREVENTION

Although lead poisoning can cause serious health problems -- including death -- most lead-poisoned children demonstrate no visible symptoms. This makes it much more important to have an effective program to prevent childhood lead poisoning. The CDC says that public health agencies should develop a comprehensive approach to preventing childhood lead poisoning that is based on assessment, policy development, and assurance. (*Screening Young Children for Lead Poisoning: Guidance for State and Local Public Health Officials*, November 1997)

Assessment

Assessment should focus on assessing children's exposure to lead. The previous section demonstrates the IDPH's assessment of lead exposure for Iowa children based on housing, poverty, and blood lead data.

Policy Development

Public health agencies should develop policies to address both primary and secondary prevention of lead poisoning. In addition, public health agencies should develop policies for monitoring or surveillance to collect information to assist the agency in planning and evaluating lead poisoning prevention policies and program activities. In addition, this data can be used to develop public support for a state's childhood lead poisoning prevention program.

Primary Prevention

Primary prevention activities are intended to prevent children from being exposed to lead. IDPH conducts the following primary prevention activities:

1. Training and certification of lead inspectors and lead abatement contractors. The IDPH modified the federal curricula for lead inspectors and lead abatement contractors to include additional information about the health effects of lead on children and how children are exposed to lead. In addition, the IDPH includes information about Iowa's system of local lead poisoning prevention programs and data showing the prevalence of childhood lead poisoning in Iowa. People who take this training in Iowa complete a hands-on exercise to assess the potential for lead exposure in their community compared to similar communities across the state.

2. Active support of new U.S. Department of Housing and Urban Development (HUD) regulations that require lead-based paint hazards to be addressed in HUD-assisted housing. Since June 2000, the IDPH has trained and certified at least one person from each housing inspection and housing rehabilitation agency in Iowa. In addition, the IDPH added Iowa-specific information to a HUD-approved 8-hour curriculum to teach lead-safe work practices to landlords and contractors working in HUD-assisted housing. Fifteen local housing agencies and health departments are now providing this training in their communities.

3. Statewide and local activities to educate communities about childhood lead poisoning. The IDPH provides brochures, videotapes, posters, and slide presentations for communities to use in their educational campaigns. The IDPH developed a state

brochure to use in place of the federal brochure for real estate disclosure and pre-renovation notification. When this brochure is approved by the U.S. Environmental Protection Agency (EPA), everyone who leases or buys pre-1978 housing will receive information about the childhood lead poisoning problem in Iowa, including Iowa's blood lead testing recommendation.

4. Pre-renovation notification. The IDPH has adopted the federal regulations for pre-renovation notification and will enforce them in Iowa.

Secondary Prevention

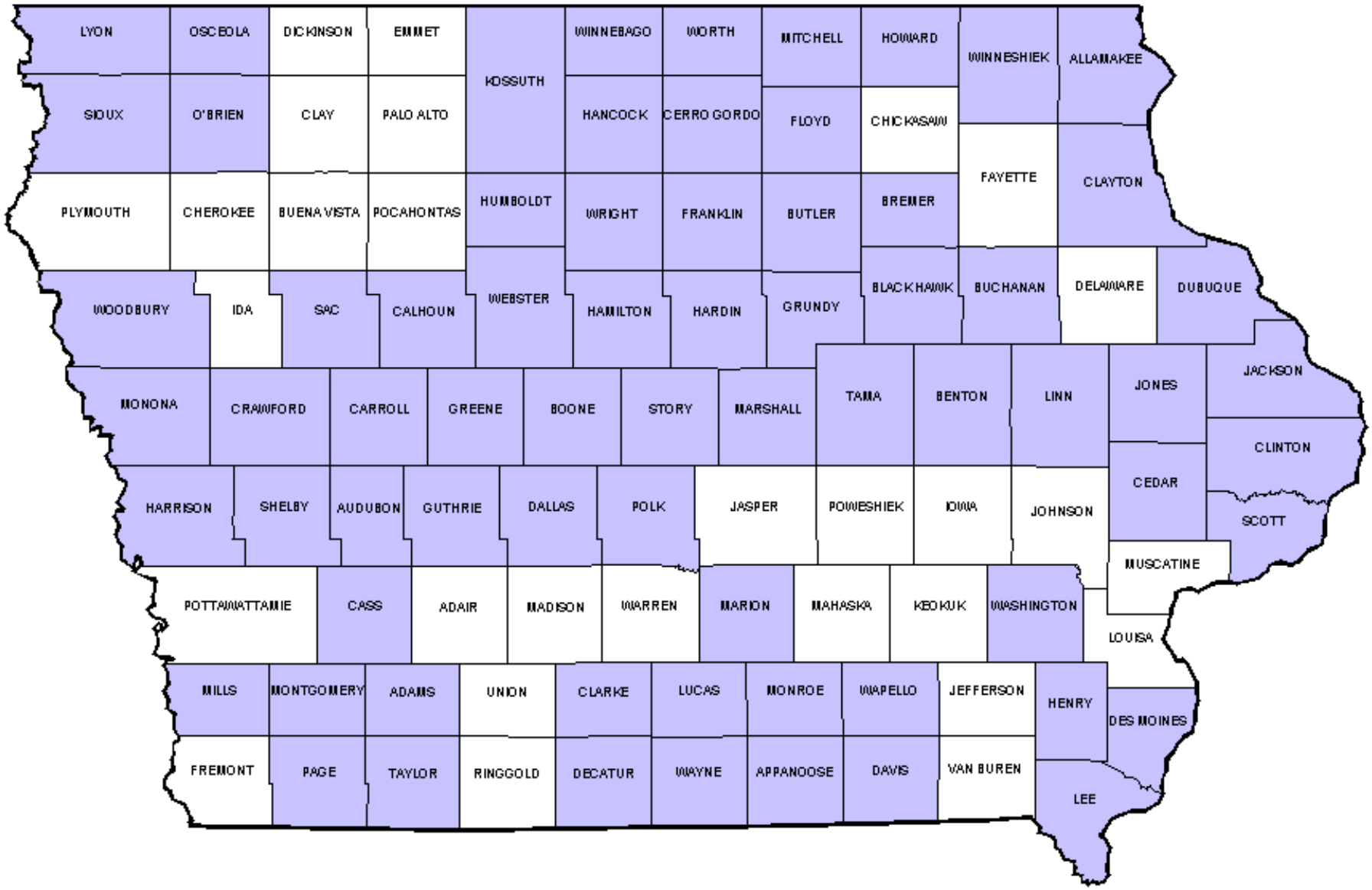
Secondary prevention activities are intended to prevent additional lead exposure for children who are already lead-poisoned. This includes testing children for lead poisoning and providing environmental and medical case management for children who have been identified as lead-poisoned. Since 1992, the IDPH has invested significant resources to increase the number of counties with local childhood lead poisoning prevention programs from four counties in 1992 to the current 70 counties. In 70 of Iowa's 99 counties, local agencies conduct these secondary prevention activities. In the other 29 counties, these activities are conducted by IDPH staff. The map on page 10 shows the Iowa counties that have local childhood lead poisoning prevention programs. In addition to testing children and providing case management services for lead-poisoned children, the CDC says that the state should develop a statewide plan for childhood blood lead testing as part of a secondary prevention strategy. This plan should be developed according to the guidance in the CDC publication, *Screening Young Children for Lead Poisoning: Guidance for State and Local Public Health Officials.*

Monitoring (Surveillance)

Monitoring or surveillance activities include developing systems to collect blood lead data and information regarding the sources of exposure for lead-poisoned children. Since 1992, the IDPH has required laboratories and physicians to report the results of all blood lead testing. The IDPH and local agencies also enter information regarding case management activities and sources of lead exposure in the STELLAR (Strategic Tracking of Elevated Lead Levels and Remediation) database.

Assurance

Assurance activities are intended to assure that planned activities are performed as planned. This includes providing services such as blood lead testing when no other providers are available and developing a system to evaluate the effectiveness of program activities. In Iowa, local agencies provide blood lead testing and case management activities. In addition, the IDPH uses data from STELLAR to evaluate the effectiveness of prevention activities.



Counties with Childhood Lead Poisoning Prevention Programs: July 1, 2003 -- June 30, 2004

STATE OF IOWA
STATEWIDE PLAN FOR
CHILDHOOD BLOOD LEAD TESTING

The CDC publication, *Screening Young Children for Lead Poisoning: Guidance for State and Local Public Health Officials,* lists six steps that state public health agencies should follow in the policy development activity of developing and implementing the statewide blood lead testing plan. These six steps are:

1. Form an advisory committee.
2. Assess lead exposure and blood lead testing capacity.
3. Determine the boundaries of the recommendation areas.
4. Decide on appropriate blood lead testing.
5. Write the blood lead testing recommendations.
6. Implement the statewide plan.

This section describes the process that the IDPH used to develop Iowa's statewide blood lead testing plan and the IDPH plans for implementation of the statewide plan.

FORM AN ADVISORY COMMITTEE

The CDC publication, *Screening Young Children for Lead Poisoning: Guidance for State and Local Public Health Officials,* says the following:

> "State health officials should form an advisory committee to develop the statewide plan. The committee should include child health-care providers as well as representatives from local health departments, managed-care organizations, Medicaid, private insurance organizations, and the community."

The 2000 Iowa General Assembly directed IDPH to convene an ad hoc committee comprised of public health officials, health care providers, consumer groups, educators, early childhood development specialists, housing officials, property owners, real estate interests, representatives from the environmental health chapter team of *Healthy Iowans 2010*, and other members deemed appropriate by the director. The committee was directed to conduct a study regarding prevention of lead poisoning among children in Iowa, including, but not limited to, the following issues:

a. An assessment of the incidence and prevalence of lead poisoning in the state, including the determination of any geographic, social, or economic patterns or other common characteristics which identify vulnerable populations in the state who are at-risk of lead poisoning.

b. An evaluation of the effectiveness of current childhood lead screening efforts and voluntary options and alternatives to increase lead screening, including incorporating lead screening information and efforts into ongoing immunization programs and activities. The study shall also identify opportunities to increase and enhance efforts that focus on preventing lead poisoning in children.

c. A review of current federal, state, and local laws, rules and regulatory programs, including standards and other requirements associated with federal, state, and local housing programs. The review shall include an evaluation of options and alternatives to encourage the adoption of more uniform standards across the state.

d. An effort to identify additional federal funding sources and opportunities to enhance medical assistance match dollars to address lead poisoning prevention, screening, medical case management, and environmental remediation.

e. An evaluation of the availability and effectiveness of current resources, programs, and efforts to address lead poisoning in children.

f. Consideration of the findings and recommendations of *Healthy Iowans 2010* relating to lead poisoned children.

The IDPH responded to this legislative mandate by convening a committee consisting of medical experts, health care providers, insurance companies, early childhood educators, housing officials, property owners, real estate interests, local CLPPP representatives, laboratory representatives, housing finance agencies, and consumers. Since the membership of this committee included the organizations suggested by the CDC to develop the blood lead testing recommendation, the IDPH decided to use the committee for this purpose. The members of the committee are listed on page 13.

IOWA DEPARTMENT OF PUBLIC HEALTH
LEAD STUDY COMMITTEE MEMBERS

Ben Bishop	City of Des Moines Housing
Vicki Evans	Wellmark Blue Cross and Blue Shield (insurance company)
Dr. Lar Fuortes	University of Iowa (Healthy Iowans 2010 Environmental Team)
Joan Gilson	Iowa Health Solutions (Medicaid managed care)
John Heisner	Iowa Landlords Association
Jeanne Hough	Upper Des Moines Opportunity, Inc. (child development expert)
Scott Johnson	Iowa Finance Authority (housing finance expert)
Teresa Jones	Mother (Good Samaritan Urban Ministries)
Kathy Lamb	City of Dubuque Housing Services
Kyle Lundberg	Linn County Health Department Laboratory
Paul McLaughlin	Iowa Association of Realtors
Bill Milani	ADLM Environmental Health
Mabel Moore	Mother and grandmother (Iowa Farm Bureau Women)
Sally Nadolsky	Iowa Department of Human Services Medicaid Program
Susan Pohl	Iowa Department of Public Health WIC Program
Mike Prideaux	Black Hawk County Health Department
Dr. Robert Schultes	Iowa Academy of Family Practice
Don Simmons	University Hygienic Laboratory
Kelly Stoller	Visiting Nursing Association of Clinton County
Kathleen Van Zandt	Iowa Department of Public Health Child Health Program
Jody Verbraken	Verbraken and Sons Painting and Decorating
Terry Vestal	Iowa Department of Economic Development
Dr. Doug Weisman	University of Iowa
Kim Young-Kent	Tri-County Head Start

The committee met on October 10, November 8, and December 6 of 2000. Dr. Ed Schor, Associate Medical Director for IDPH and Medical Director of the Division of Family and Community Health, served as the committee's facilitator. The committee developed the blood lead testing recommendation at its first meeting.

On January 24, 2004, the IDPH Child Health Team met to review, and if necessary, revise the blood lead testing recommendation. The members of the Child Health Team present at the meeting are listed below.

Erin Barkema	EPSDT (Medicaid)
Janet Beaman	EPSDT (Medicaid)
Sally Clausen	Healthy Child Care Iowa
Lucia Dhooge	EPSDT (Medicaid)
Martha Gelhaus	SSDI
Joanne Hinrichs	HOPES/Healthy Families
Marcus Johnson	Covering Kids and Families
Beth Jones	Covering Kids and Families
Erin Kongshaug	Iowa Review of Family Assets
Heather Miller	Oral Health
Angie Doyle Scar	Covering Kids and Families
Kim Tichy	Healthy Child Care Iowa

ASSESS LEAD EXPOSURE AND BLOOD LEAD TESTING CAPACITY

The CDC recommends that the advisory committee use blood lead data, housing data, demographic data on children, and data on the presence of other sources of lead to assess lead exposure in the state. The CDC recommends that the advisory committee also assess the capacity of local public health agencies to oversee and provide blood lead testing.

Blood Lead Data

The CDC says that the following criteria should be used to evaluate blood lead data:

1. Laboratory data are available for children who have been tested. Iowa data meet this criterion.
2. Laboratory data are of good quality. In general, Iowa data meet this criterion.
3. Laboratory data are available for individual children. Iowa data meet this criterion.
4. Demographic, socioeconomic, and geographic data are available for individual children. The date of birth and address of the child are available for each blood lead test. The Medicaid status is known for children covered by Medicaid in 1996 or later. Race and ethnicity are not required reporting elements.
5. Testing data are representative of the pediatric population of the jurisdiction. Iowa data partially meet this criterion. Based on address and Medicaid status, it appears that both very high risk and very low risk children are being tested across the state of Iowa. In counties where testing numbers are low, the risk of lead exposure can be estimated by reviewing data in counties that have similar proportions of pre-1950 housing and rates of children in poverty and have larger testing numbers.
6. Testing data are available for a sample that is large enough to allow for a valid estimate of prevalence to be made. Iowa data partially meet this criterion. In counties where testing numbers are low, the risk of lead exposure can be estimated by reviewing data in

counties that have similar proportions of pre-1950 housing and rates of children in poverty and have larger testing numbers.

7. Labs reporting data should be successful participants in an approved proficiency testing program. Iowa data meet this criterion.

8. Blood lead level tests should be maintained in a way that allows identification of duplicate and sequential tests on a single child. It must be possible to distinguish between the number of children tested and the number of tests performed. Iowa data meet this criterion.

9. The results of all tests, regardless of blood lead levels, should be available, so that calculation of rates of elevated blood lead levels among tested children can take place. Iowa data meet this criterion.

10. The data should be representative, i.e., the demographic, socioeconomic, and geographic distribution of children screened should be similar to that of all children in the jurisdiction. Iowa data appear to meet this criterion.

It appears that Iowa's blood lead data meet enough of these criteria to be useful in assessing the lead exposure of Iowa children.

Table 1 on pages 16 to 18 shows the results of blood lead testing in children who were born from January 1, 1995, through December 31, 1999, and who were tested at least once between the ages of 12 to 35 months. By analyzing the data by birth cohort, IDPH can calculate the percentage of children who were tested as well as the percentage of these children who were identified as lead-poisoned. The map on page 19 shows the percentage of children who were tested. The map on page 20 shows the percentage of children who were tested and identified as lead-poisoned. Table 2 on pages 21 to 24 shows the results of blood lead testing in children who were covered by Medicaid versus children who were not covered by Medicaid. The map on page 25 shows the percentage of Medicaid children who were tested. The map on page 26 shows the percentage of Medicaid children who were tested and identified as lead-poisoned. (These data have been updated to reflect more recent data than was available when the committee originally met in 2000.

TABLE 1
CHILDREN BORN 1/1/95 - 12/31/99 AND TESTED AT 12 MONTHS TO 35 MONTHS

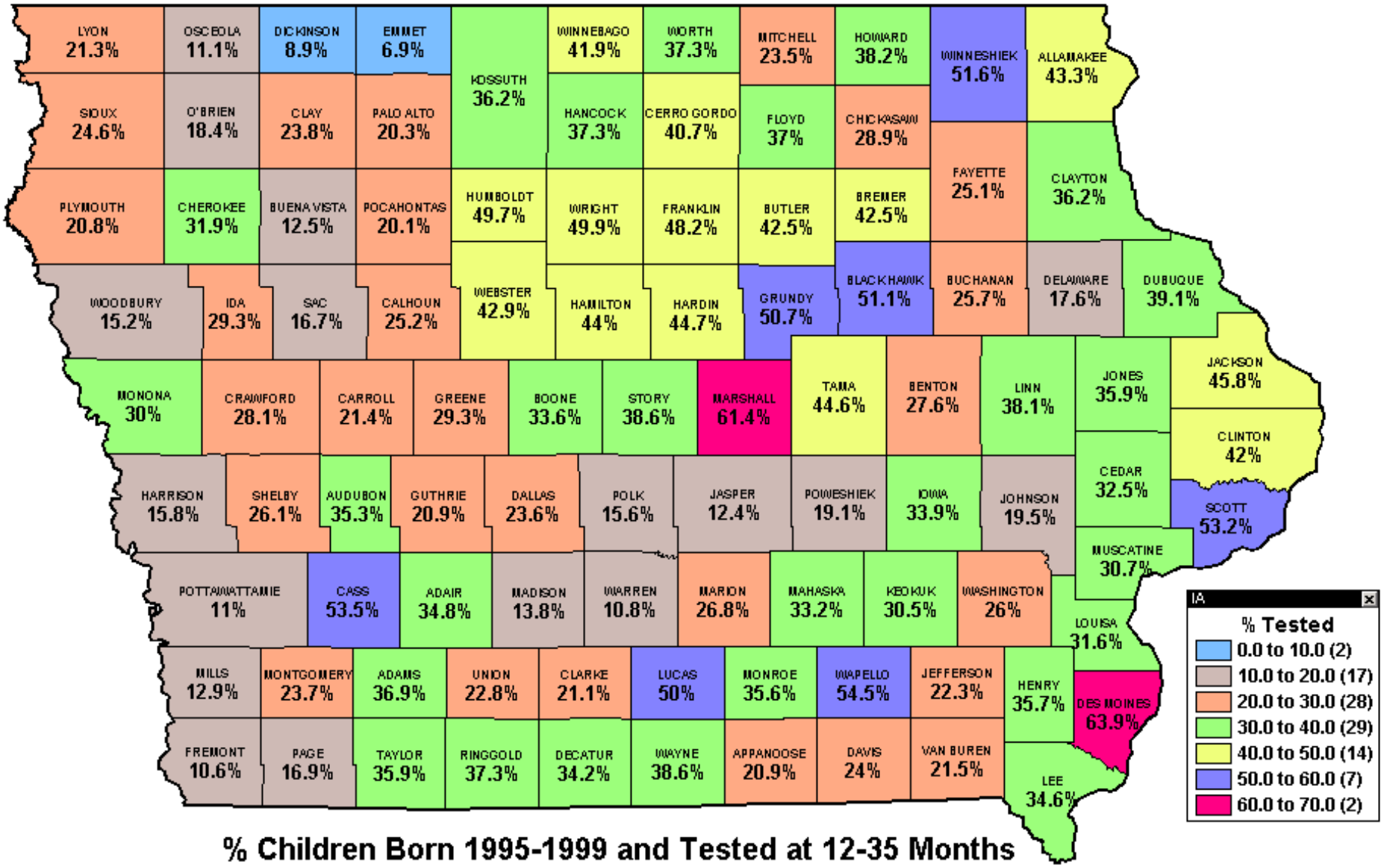
COUNTY	1995-1999 BIRTHS	Children Tested	% Children Tested	Number >= 10 µg/dL	%>= 10 µg/dL	% Pre-1950 Housing	% Children in Poverty	% Minority and Hispanic Population
Adair	356	124	34.8	12	9.7%	52.7%	14.0%	1.3%
Adams	214	79	36.9	11	13.9%	61.0%	21.5%	1.3%
Allamakee	853	369	43.3	47	12.7%	43.3%	12.6%	7.0%
Appanoose	767	160	20.9	12	7.5%	45.4%	19.2%	2.1%
Audubon	360	127	35.3	13	10.2%	57.8%	12.2%	0.9%
Benton	1433	395	27.6	30	7.6%	47.3%	9.1%	1.2%
Black Hawk	7928	4054	51.1	378	9.3%	32.3%	18.4%	12.0%
Boone	1510	507	33.6	42	8.3%	50.9%	11.1%	1.9%
Bremer	1148	488	42.5	30	6.1%	44.0%	5.5%	1.7%
Buchanan	1460	375	25.7	25	6.7%	41.9%	14.6%	1.7%
Buena Vista	1196	150	12.5	10	6.7%	48.4%	17.4%	23.3%
Butler	795	338	42.5	32	9.5%	54.3%	12.7%	1.1%
Calhoun	543	137	25.2	9	6.6%	53.3%	11.0%	2.3%
Carroll	1279	274	21.4	25	9.1%	44.0%	8.7%	1.4%
Cass	763	408	53.5	64	15.7%	55.9%	14.3%	1.5%
Cedar	963	313	32.5	41	13.1%	49.2%	5.3%	1.9%
Cerro Gordo	2792	1137	40.7	61	5.4%	44.1%	12.5%	5.4%
Cherokee	656	209	31.9	33	15.8%	53.4%	14.1%	2.2%
Chickasaw	696	201	28.9	12	6%	49.7%	8.9%	1.3%
Clarke	478	101	21.1	16	15.8%	41.8%	12.3%	6.8%
Clay	965	230	23.8	10	4.3%	42.0%	20.1%	2.5%
Clayton	977	354	36.2	43	12.1%	56.4%	14.4%	1.4%
Clinton	3194	1343	42.0	158	11.8%	49.4%	19.1%	4.3%
Crawford	1019	286	28.1	40	14%	49.1%	12.2%	14.9%
Dallas	2491	588	23.6	56	9.5%	30.9%	6.9%	9.8%
Davis	545	131	24.0	16	12.2%	45.5%	11.8%	1.5%
Decatur	474	162	34.2	23	14.2%	43.6%	13.4%	4.0%
Delaware	1097	193	17.6	27	14%	43.3%	9.2%	1.1%
Des Moines	2671	1706	63.9	178	10.4%	50.5%	20.7%	6.9%
Dickinson	802	71	8.9	6	8.5%	26.3%	10.5%	1.3%
Dubuque	5834	2280	39.1	175	7.7%	38.9%	10.4%	3.3%
Emmet	610	42	6.9	2	4.8%	54.2%	7.7%	6.4%
Fayette	1245	312	25.1	27	8.7%	54.2%	14.7%	3.0%
STATE TOTAL	185372	56961	30.7	5409	9.5%	39.3%	12.9%	7.8%
NATIONAL AVERAGE	NA	NA	NA	NA	2.9%	**22.3%**	**NA**	**NA**

TABLE 1
CHILDREN BORN 1/1/95 - 12/31/99 AND TESTED AT 12 MONTHS TO 35 MONTHS

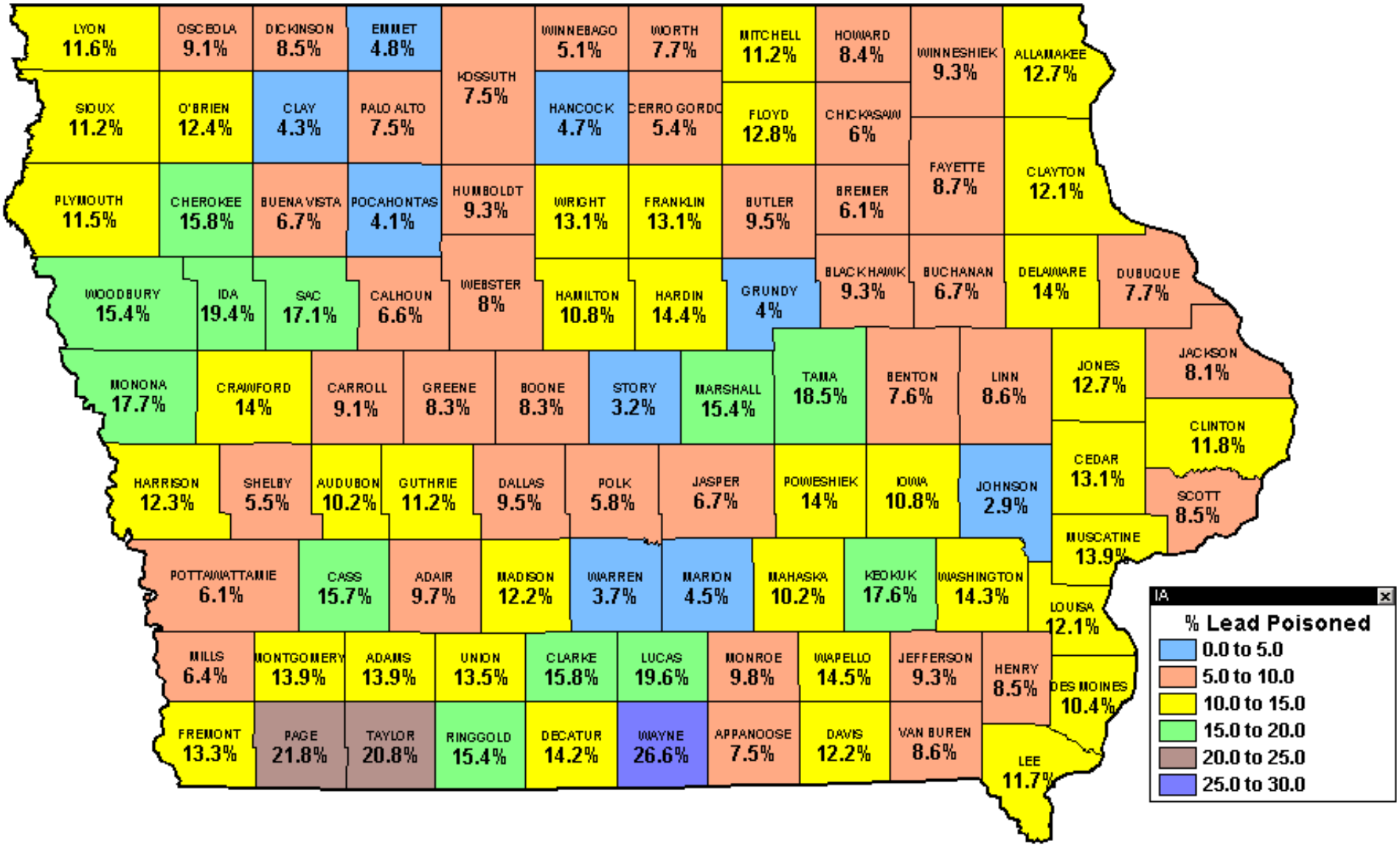
COUNTY	1995-1999 BIRTHS	Children Tested	% Children Tested	Number >= 10 µg/dL	%>= 10 µg/dL	% Pre-1950 Housing	% Children in Poverty	% Minority and Hispanic Population
Floyd	994	368	37.0	47	12.8%	46.5%	14.5%	2.5%
Franklin	604	291	48.2	38	13.1%	57.1%	7.2%	10.6%
Fremont	426	45	10.6	6	13.3%	51.7%	16.7%	3.7%
Greene	577	169	29.3	14	8.3%	56.1%	12.9%	2.9%
Grundy	590	299	50.7	12	4%	48.7%	4.5%	1.1%
Guthrie	640	134	20.9	15	11.2%	47.3%	7.5%	1.8%
Hamilton	1009	444	44.0	48	10.8%	49.3%	8.2%	3.9%
Hancock	632	236	37.3	11	4.7%	47.5%	7.5%	4.4%
Hardin	1090	487	44.7	70	14.4%	52.7%	11.5%	4.7%
Harrison	871	138	15.8	17	12.3%	55.1%	11.0%	1.4%
Henry	1216	434	35.7	37	8.5%	39.0%	12.2%	5.4%
Howard	563	215	38.2	18	8.4%	54.1%	9.8%	1.1%
Humboldt	583	290	49.7	27	9.3%	47.3%	23.5%	1.8%
Ida	441	129	29.3	25	19.4%	56.7%	9.6%	1.0%
Iowa	927	314	33.9	34	10.8%	50.0%	5.4%	1.9%
Jackson	1213	555	45.8	45	8.1%	41.6%	17.3%	1.1%
Jasper	2155	267	12.4	18	6.7%	39.6%	9.9%	2.8%
Jefferson	815	182	22.3	17	9.3%	41.7%	19.3%	4.9%
Johnson	6411	1252	19.5	36	2.9%	18.0%	10.2%	10.9%
Jones	1012	363	35.9	46	12.7%	44.3%	9.0%	3.6%
Keokuk	673	205	30.5	36	17.6%	57.7%	13.9%	1.2%
Kossuth	846	306	36.2	23	7.5%	50.0%	15.7%	1.7%
Lee	2317	802	34.6	94	11.7%	47.9%	13.5%	6.9%
Linn	13101	4991	38.1	428	8.6%	26.2%	9.5%	6.1%
Louisa	862	272	31.6	33	12.1%	44.6%	13.9%	17.8%
Lucas	530	265	50.0	52	19.6%	51.4%	18.2%	1.8%
Lyon	726	155	21.3	18	11.6%	51.8%	6.4%	0.9%
Madison	832	115	13.8	14	12.2%	48.3%	6.9%	1.5%
Mahaska	1395	463	33.2	47	10.2%	46.9%	14.4%	2.9%
Marion	1909	512	26.8	23	4.5%	34.0%	10.4%	2.7%
Marshall	2625	1612	61.4	249	15.4%	43.6%	15.1%	17.2%
Mills	844	109	12.9	7	6.4%	38.0%	11.2%	2.4%
Mitchell	648	152	23.5	17	11.2%	54.4%	20.3%	1.1%
STATE TOTAL	185372	56961	30.7	5409	9.5%	39.3%	12.9%	7.8%
NATIONAL AVERAGE	NA	NA	NA	NA	**2.9%**	**22.3%**	**NA**	**NA**

TABLE 1
CHILDREN BORN 1/1/95 - 12/31/99 AND TESTED AT 12 MONTHS TO 35 MONTHS

COUNTY	1995-1999 BIRTHS	Children Tested	% Children Tested	Number >= 10 µg/dL	%>= 10 µg/dL	% Pre-1950 Housing	% Children in Poverty	% Minority and Hispanic Population
Monona	547	164	30.0	29	17.7%	55.2%	11.4%	1.7%
Monroe	458	163	35.6	16	9.8%	51.3%	11.1%	1.6%
Montgomery	731	173	23.7	24	13.9%	57.8%	15.9%	2.7%
Muscatine	3023	927	30.7	129	13.9%	42.1%	13.8%	19.9%
O'brien	922	170	18.4	21	12.4%	49.5%	10.8%	3.3%
Osceola	398	44	11.1	4	9.1%	55.4%	8.6%	3.2%
Page	922	156	16.9	34	21.8%	54.6%	23.1%	4.7%
Palo Alto	526	107	20.3	8	7.5%	48.4%	15.9%	1.5%
Plymouth	1551	323	20.8	37	11.5%	42.6%	9.5%	2.5%
Pocahontas	364	73	20.1	3	4.1%	57.9%	14.0%	1.8%
Polk	28774	4485	15.6	261	5.8%	27.1%	11.8%	14.5%
Pottawattamie	5805	637	11.0	39	6.1%	38.2%	13.8%	6.2%
Poweshiek	972	186	19.1	26	14%	40.8%	12.7%	3.6%
Ringgold	279	104	37.3	16	15.4%	50.7%	27.2%	0.8%
Sac	665	111	16.7	19	17.1%	55.2%	22.1%	1.9%
Scott	11332	6032	53.2	510	8.5%	30.6%	17.8%	13.9%
Shelby	694	181	26.1	10	5.5%	51.5%	8.1%	1.5%
Sioux	1996	491	24.6	55	11.2%	39.7%	9.0%	4.7%
Story	4351	1678	38.6	54	3.2%	24.1%	10.5%	9.3%
Tama	1176	524	44.6	97	18.5%	54.9%	18.2%	12.3%
Taylor	362	130	35.9	27	20.8%	60.0%	15.5%	5.4%
Union	749	171	22.8	23	13.5%	52.1%	17.8%	2.0%
Van Buren	433	93	21.5	8	8.6%	51.4%	18.3%	1.5%
Wapello	2073	1129	54.5	164	14.5%	49.8%	20.3%	5.2%
Warren	2462	267	10.8	10	3.7%	21.9%	9.0%	2.2%
Washington	1479	385	26.0	55	14.3%	49.3%	12.6%	5.0%
Wayne	332	128	38.6	34	26.6%	52.9%	22.9%	1.2%
Webster	2525	1084	42.9	87	8%	47.7%	15.3%	7.9%
Winnebago	661	277	41.9	14	5.1%	44.3%	10.0%	4.2%
Winneshiek	1046	540	51.6	50	9.3%	51.3%	8.7%	2.4%
Woodbury	8381	1270	15.2	196	15.4%	45.3%	14.9%	19.8%
Worth	415	155	37.3	12	7.7%	57.8%	7.0%	2.5%
Wright	777	388	49.9	51	13.1%	49.9%	6.6%	8.4%
STATE TOTAL	185372	56961	30.7	5409	9.5%	39.3%	12.9%	7.8%
NATIONAL AVERAGE	NA	NA	NA	NA	2.9%	**22.3%**	**NA**	**NA**



% Children Born 1995-1999 and Tested at 12-35 Months



% Children Born 1995-1999 Tested at 12-35 Months and Identified as Lead-Poisoned

TABLE 1
CHILDREN BORN 1/1/1995 – 12/31/1999 AND TESTED FOR LEAD POISONING
AT THE AGE OF 12-35 MONTHS
MEDICAID ENROLLED VERSUS NON-MEDICAID ENROLLED

COUNTY	NUMBER MEDICAID ENROLLED	MEDICAID ENROLLED TESTED	%MEDICAID TESTED	NUMBER MEDICAID EBL*	MEDICAID %EBL*	NUMBER NON-MEDICAID CHILDREN	NUMBER NON-MEDICAID TESTED	% NON-MEDICAID TESTED	NUMBER NON-MEDICAID EBL*	NON-MEDICAID %EBL*
Adair	186	59	25.7%	7	11.9%	207	65	31.4%	5	7.7%
Adams	149	51	24.2%	7	13.7%	99	28	28.3%	4	14.3%
Allamakee	463	152	25.3%	30	19.7%	463	217	46.9%	17	7.8%
Appanoose	562	108	26.2%	9	8.3%	266	52	19.5%	3	5.8%
Audubon	166	67	33.3%	8	11.9%	241	60	24.9%	5	8.3%
Benton	565	177	18%	21	11.9%	879	218	24.8%	9	4.1%
Black Hawk	5213	2751	46.3%	339	12.3%	4943	1303	26.4%	39	3%
Boone	684	210	38.8%	31	14.8%	874	297	34.0%	11	3.7%
Bremer	479	221	46.2%	21	9.5%	745	267	35.8%	9	3.4%
Buchanan	614	182	17.6%	16	8.8%	875	193	22.1%	9	4.7%
Buena Vista	965	98	13.6%	8	8.2%	313	52	16.6%	2	3.8%
Butler	405	169	38.1%	17	10.1%	500	169	33.8%	15	8.9%
Calhoun	308	71	13.2%	8	11.3%	261	66	25.3%	1	1.5%
Carroll	545	125	21.9%	19	15.2%	701	149	21.3%	6	4%
Cass	488	190	33.3%	46	24.2%	410	218	53.2%	18	8.3%
Cedar	392	136	29.2%	30	22.1%	584	177	30.3%	11	6.2%
Cerro Gordo	1403	570	35.5%	40	7%	1648	567	34.4%	21	3.7%
Cherokee	406	166	35.6%	32	19.3%	384	43	11.2%	1	2.3%
Chickasaw	393	95	18.8%	10	10.5%	358	106	29.6%	2	1.9%
Clarke	368	67	22.7%	14	20.9%	160	34	21.3%	2	5.9%
Clay	558	105	17.4%	8	7.6%	444	125	28.2%	2	1.6%
Clayton	463	205	14.4%	36	17.6%	633	149	23.5%	7	4.7%
Clinton	2082	783	33.3%	131	16.7%	1679	560	33.4%	27	4.8%
Crawford	646	143	17.4%	22	15.4%	428	143	33.4%	18	12.6%
Dallas	1196	313	18.2%	47	15%	1330	275	20.7%	9	3.3%
Davis	241	80	35.6%	13	16.3%	310	51	16.5%	3	5.9%
STATE TOTAL	98721	29838	24.5%	4064	13.6%	99472	27123	27.3%	1345	5%

***EBL means elevated blood lead (greater than or equal to 10 micrograms per deciliter).**

TABLE 2
CHILDREN BORN 1/1/1995 – 12/31/1999 AND TESTED FOR LEAD POISONING
AT THE AGE OF 12-35 MONTHS
MEDICAID ENROLLED VERSUS NON-MEDICAID ENROLLED

COUNTY	NUMBER MEDICAID ENROLLED	MEDICAID ENROLLED TESTED	%MEDICAID TESTED	NUMBER MEDICAID EBL*	MEDICAID %EBL*	NUMBER NON-MEDICAID CHILDREN	NUMBER NON-MEDICAID TESTED	% NON-MEDICAID TESTED	NUMBER NON-MEDICAID EBL*	NON-MEDICAID %EBL*
Decatur	378	106	9.8%	18	17%	178	56	31.5%	5	8.9%
Delaware	344	78	6.3%	16	21.8%	656	115	17.5%	11	9.6%
Des Moines	1812	902	45.8%	129	14.4%	1566	804	51.3%	49	6.1%
Dickinson	422	31	7.5%	5	16.1%	347	40	11.5%	1	2.5%
Dubuque	2470	905	37.1%	123	13.6%	3560	1375	38.6%	52	3.8%
Emmet	383	21	7.5%	1	4.8%	201	21	10.4%	1	4.8%
Fayette	719	177	15.9%	24	13.6%	622	135	21.7%	3	2.2%
Floyd	573	228	30%	33	14.5%	570	140	24.6%	14	10%
Franklin	377	152	26.9%	29	19.1%	326	139	42.6%	9	6.5%
Fremont	329	20	3.9%	5	25%	113	25	22.1%	1	4%
Greene	339	102	36.2%	12	11.8%	298	67	22.5%	2	3%
Grundy	196	118	62.8%	7	5.9%	428	181	42.3%	5	2.8%
Guthrie	369	81	21.1%	13	16%	296	53	17.9%	2	3.8%
Hamilton	498	272	27.9%	40	14.7%	701	172	24.5%	8	4.7%
Hancock	331	101	22.1%	7	6.9%	351	135	38.5%	4	3%
Hardin	682	252	25%	55	21.8%	563	235	41.7%	15	6.4%
Harrison	499	65	12.7%	9	13.8%	382	73	19.1%	8	11%
Henry	669	178	14.5%	26	14.6%	635	256	40.3%	11	4.3%
Howard	290	128	47.3%	13	10.2%	367	87	23.7%	5	5.7%
Humboldt	289	145	45.5%	21	14.5%	382	145	38.0%	6	4.1%
Ida	228	115	36.4%	25	21.7%	279	14	5.0%	0	0%
Iowa	396	181	38.4%	26	14.4%	569	133	23.4%	8	6%
Jackson	656	299	55.6%	36	12%	759	256	33.7%	9	3.5%
Jasper	892	110	11.7%	12	10.9%	1139	157	13.8%	6	3.8%
Jefferson	513	106	20.4%	11	10.4%	347	76	21.9%	6	7.9%
Johnson	2410	428	11.6%	14	3.3%	3649	824	22.6%	22	2.7%
Jones	491	187	34.3%	34	18.2%	595	176	29.6%	12	6.8%
STATE TOTAL	98721	29838	24.5%	4064	13.6%	99472	27123	27.3%	1345	5%

***EBL means elevated blood lead (greater than or equal to 10 micrograms per deciliter).**

TABLE 2
CHILDREN UNDER THE AGE OF 6 YEARS TESTED FOR LEAD POISONING
1/1/95 – 12/31/98
MEDICAID ENROLLED VERSUS NON-MEDICAID ENROLLED

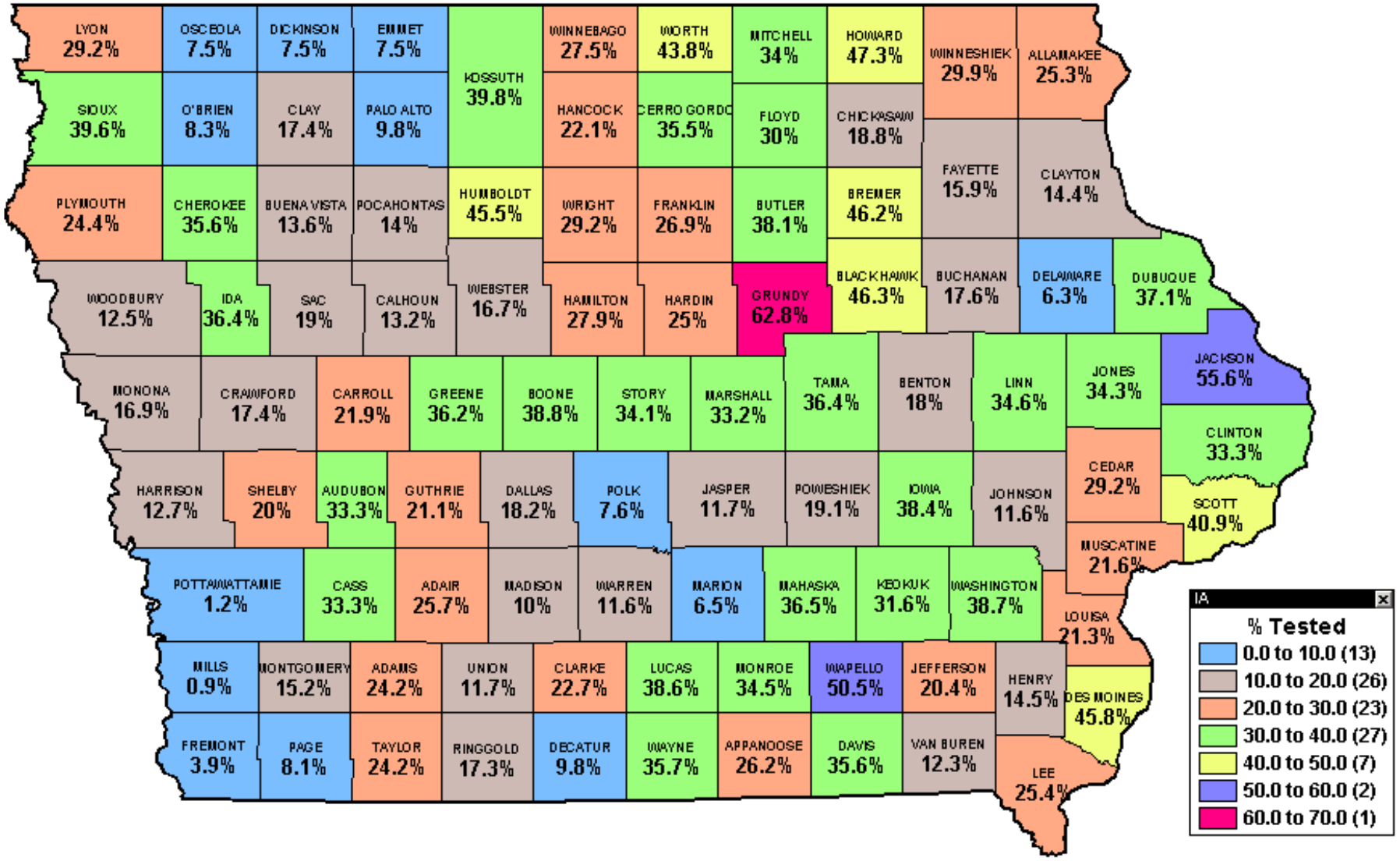
COUNTY	NUMBER MEDICAID ENROLLED	MEDICAID ENROLLED TESTED	%MEDICAID TESTED	NUMBER MEDICAID EBL*	MEDICAID %EBL*	NUMBER NON-MEDICAID CHILDREN	NUMBER NON-MEDICAID TESTED	% NON-MEDICAID TESTED	NUMBER NON-MEDICAID EBL*	NON-MEDICAID %EBL*
Keokuk	386	117	31.6%	26	22.2%	362	88	24.3%	10	11.4%
Kossuth	407	148	39.8%	13	8.8%	500	158	31.6%	10	6.3%
Lee	1609	372	25.4%	62	16.7%	935	430	46.0%	32	7.4%
Linn	5388	2464	34.6%	339	13.8%	8705	2527	29.0%	89	3.5%
Louisa	585	140	21.3%	22	15%	376	132	35.1%	11	8.3%
Lucas	342	137	38.6%	32	23.4%	274	128	46.7%	20	15.6%
Lyon	331	129	29.2%	14	10.9%	441	26	5.9%	4	15.4%
Madison	388	55	10%	8	14.5%	422	60	14.2%	6	10%
Mahaska	771	268	36.5%	43	16%	787	195	24.8%	4	2.1%
Marion	825	208	6.5%	16	7.7%	1098	304	27.7%	7	2.3%
Marshall	1673	944	33.2%	182	19.3%	1649	668	40.5%	67	10%
Mills	462	42	0.9%	4	9.5%	339	67	19.8%	3	4.5%
Mitchell	213	72	34%	10	13.9%	411	80	19.5%	7	8.8%
Monona	384	102	16.9%	20	19.6%	242	62	25.6%	9	14.5%
Monroe	271	95	34.5%	12	12.6%	248	68	27.4%	4	5.9%
Montgomery	495	115	15.2%	15	13%	288	58	20.1%	9	15.5%
Muscatine	2031	563	21.6%	90	16%	1355	364	26.9%	39	10.7%
O'Brien	408	73	8.3%	12	16.4%	492	97	19.7%	9	9.3%
Osceola	187	19	7.5%	2	10.5%	187	25	13.4%	2	8%
Page	655	122	8.1%	31	25.4%	322	34	10.6%	3	8.8%
Palo Alto	286	49	9.8%	6	12.2%	257	58	22.6%	2	3.4%
Plymouth	654	247	24.4%	32	13%	962	76	7.9%	5	6.6%
Pocahontas	226	32	14%	2	6.3%	144	41	28.5%	1	2.4%
Polk	13159	2060	7.6%	178	8.6%	14670	2425	16.5%	83	3.4%
Pottawattamie	4240	319	1.2%	28	8.8%	1657	318	19.2%	11	3.5%
Poweshiek	431	87	19.1%	10	11.5%	529	99	18.7%	16	16.2%
Ringgold	195	63	17.3%	15	23.8%	136	41	30.1%	1	2.4%
STATE TOTAL	98721	29838	24.5%	4064	13.6%	99472	27123	27.3%	1345	5%

***EBL means elevated blood lead (greater than or equal to 10 micrograms per deciliter).**

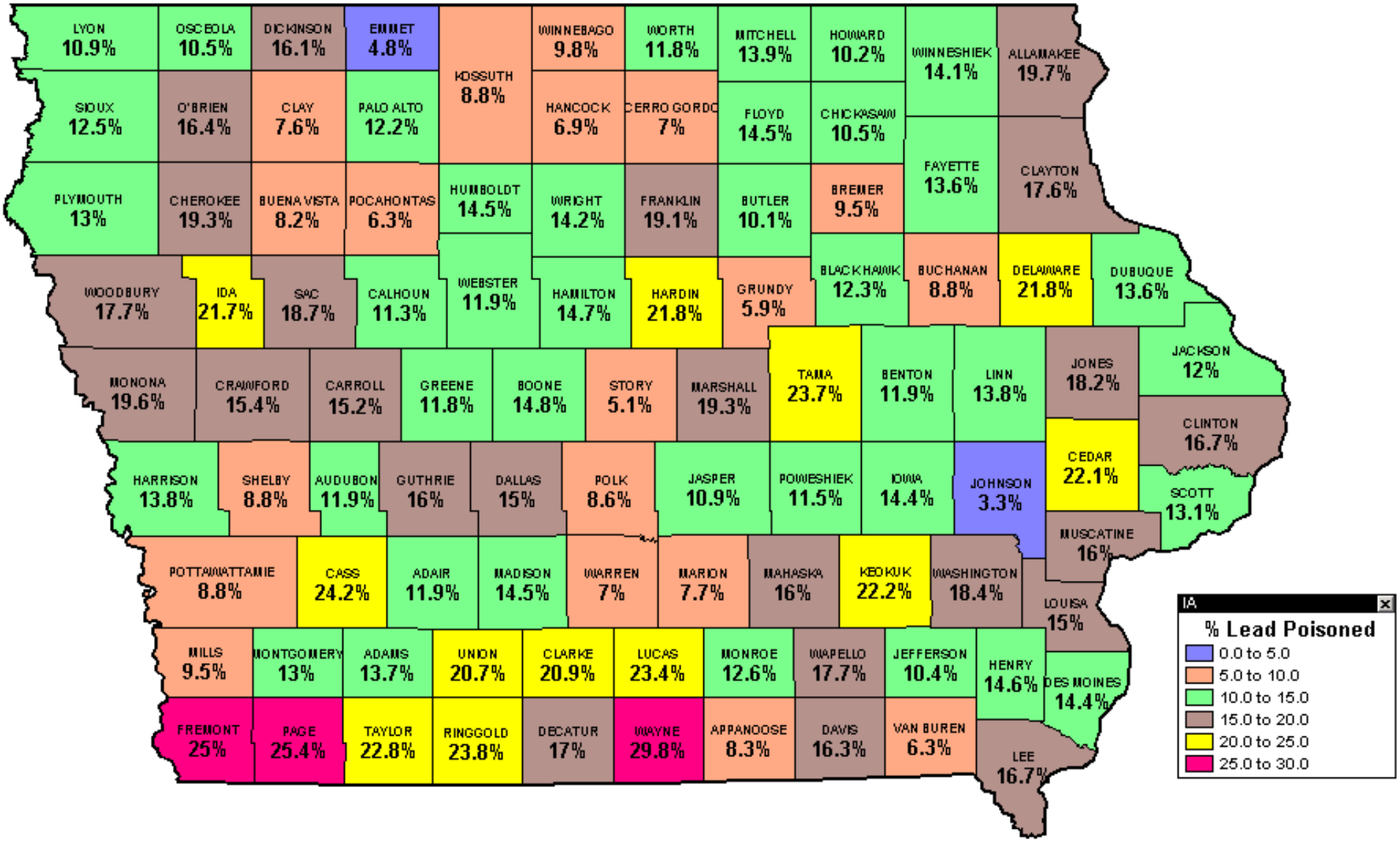
TABLE 2
CHILDREN BORN 1/1/1995 – 12/31/1999 AND TESTED FOR LEAD POISONING
AT THE AGE OF 12-35 MONTHS
MEDICAID ENROLLED VERSUS NON-MEDICAID ENROLLED

COUNTY	NUMBER MEDICAID ENROLLED	MEDICAID ENROLLED TESTED	%MEDICAID TESTED	NUMBER MEDICAID EBL*	MEDICAID %EBL*	NUMBER NON-MEDICAID CHILDREN	NUMBER NON-MEDICAID TESTED	% NON-MEDICAID TESTED	NUMBER NON-MEDICAID EBL*	NON-MEDICAID %EBL*
Sac	333	75	19%	14	18.7%	325	36	11.1%	5	13.9%
Scott	7419	3139	40.9%	411	13.1%	6278	2893	46.1%	99	3.4%
Shelby	287	91	20%	8	8.8%	440	90	20.5%	2	2.2%
Sioux	835	353	39.6%	44	12.5%	1309	138	10.5%	11	8%
Story	1700	624	34.1%	31	5.1%	2737	1054	38.5%	23	2.2%
Tama	633	299	36.4%	71	23.7%	721	225	31.2%	26	11.6%
Taylor	295	92	24.2%	21	22.8%	140	38	27.1%	6	15.8%
Union	476	87	11.7%	18	20.7%	296	84	28.4%	5	6%
Van Buren	261	48	12.3%	3	6.3%	184	45	24.5%	5	11.1%
Wapello	1676	821	50.5%	145	17.7%	1107	308	27.8%	19	6.2%
Warren	935	100	11.6%	7	7%	1341	167	12.5%	3	1.8%
Washington	609	201	38.7%	37	18.4%	872	184	21.1%	18	9.8%
Wayne	208	84	35.7%	25	29.8%	192	44	22.9%	9	20.5%
Webster	1460	580	16.7%	69	11.9%	1414	504	35.6%	18	3.6%
Winnebago	400	143	27.5%	14	9.8%	348	134	38.5%	0	0%
Winneshiek	392	177	29.9%	25	14.1%	698	363	52.0%	25	6.9%
Woodbury	5627	807	12.5%	143	17.7%	2975	463	15.6%	53	11.4%
Worth	199	68	43.8%	8	11.8%	236	87	36.9%	4	4.6%
Wright	479	225	29.2%	32	14.2%	457	163	35.7%	19	11.7%
STATE TOTAL	98721	29838	24.5%	4064	13.6%	99472	27123	27.3%	1345	5%

***EBL means elevated blood lead (greater than or equal to 10 micrograms per deciliter).**



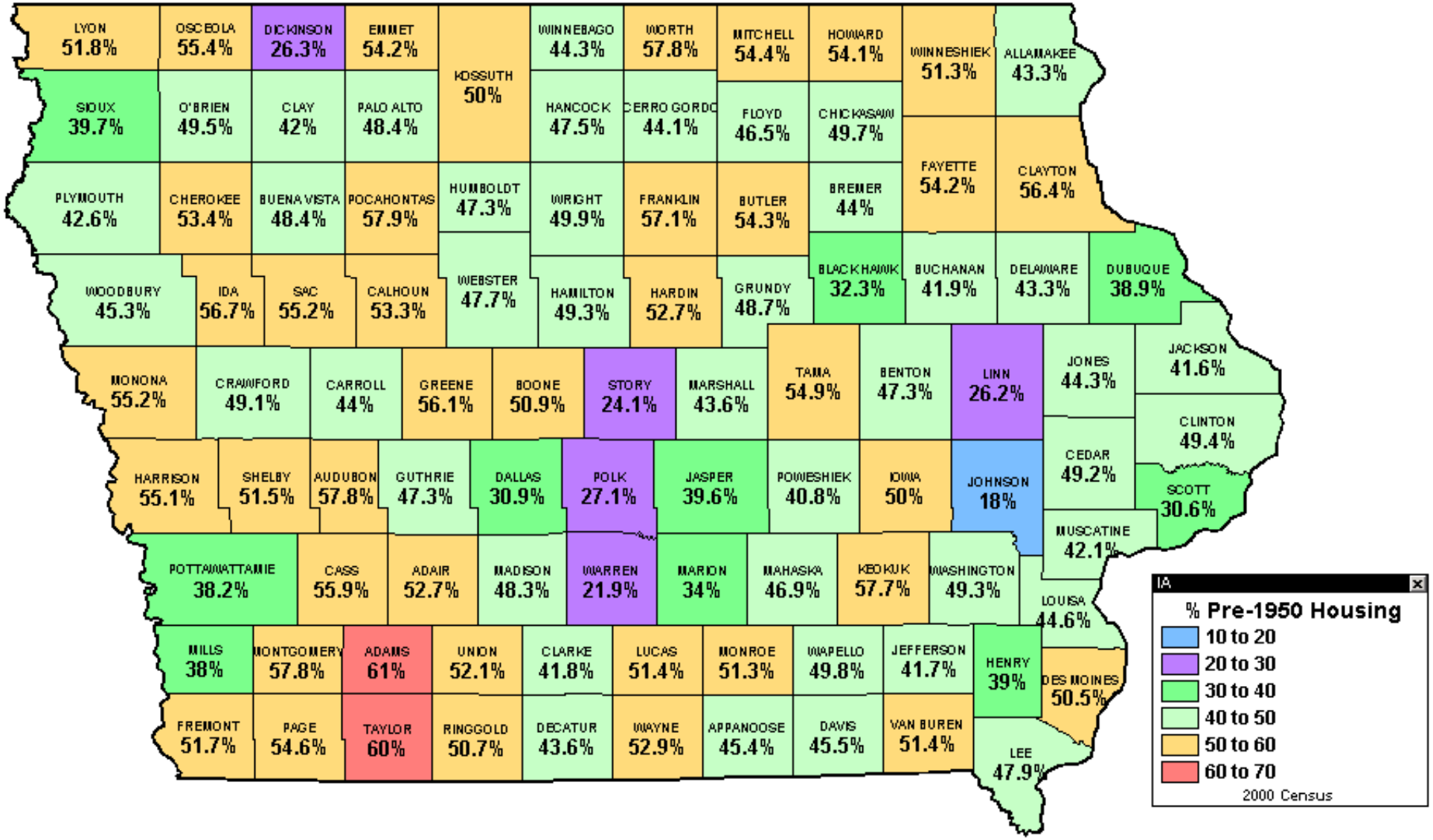
% Medicaid Children Born 1995-1999 and Tested at 12-35 Months



% Medicaid Children Born 1995-1999 Tested at 12-35 Months and Identified as Lead-Poisoned

Housing Data

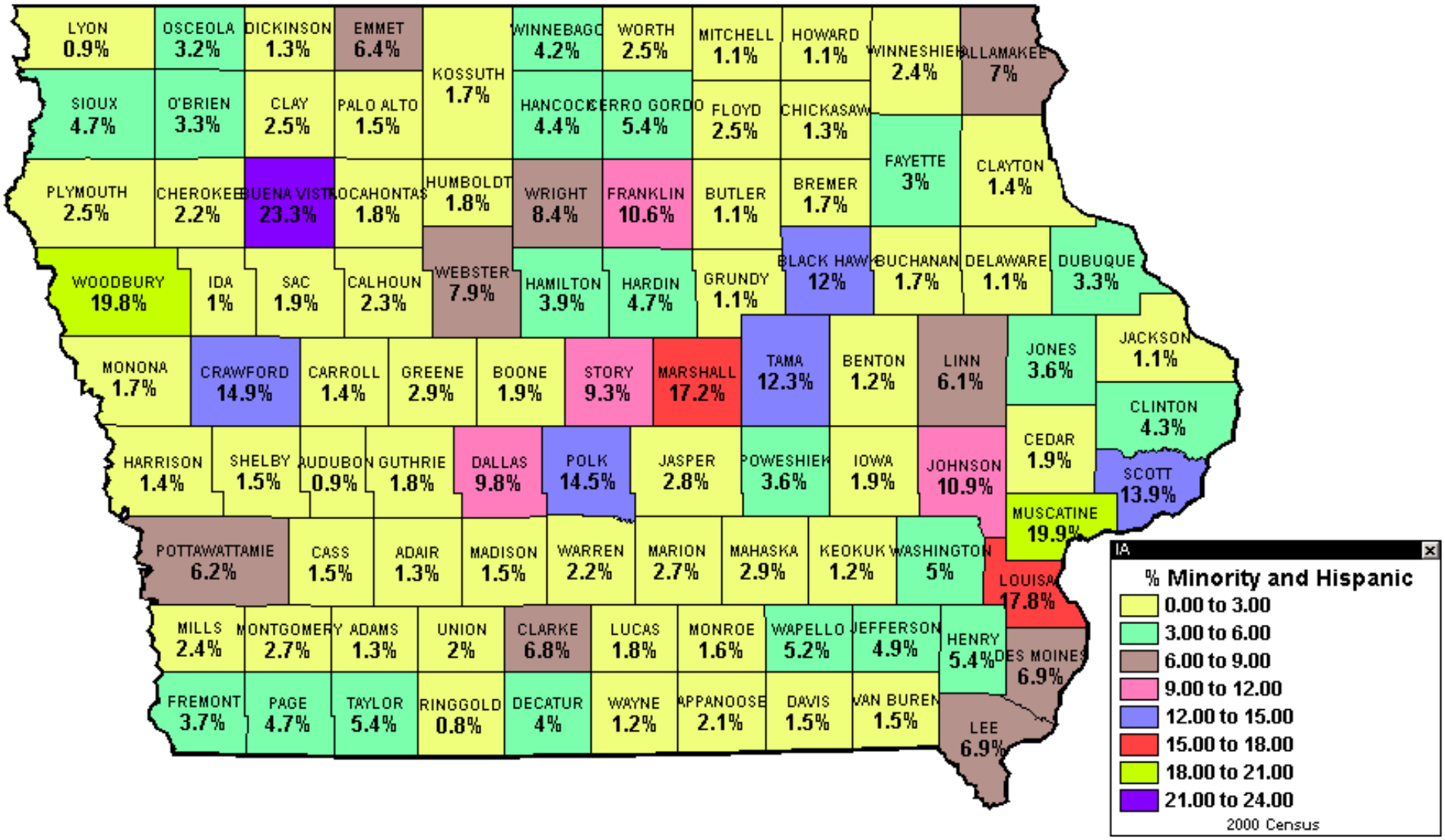
The CDC says that housing data showing the percentage of housing built before 1950 should be used to develop the blood lead testing plan. The map on page 28 shows the percentage of housing built before 1950 for the state of Iowa and for each county.



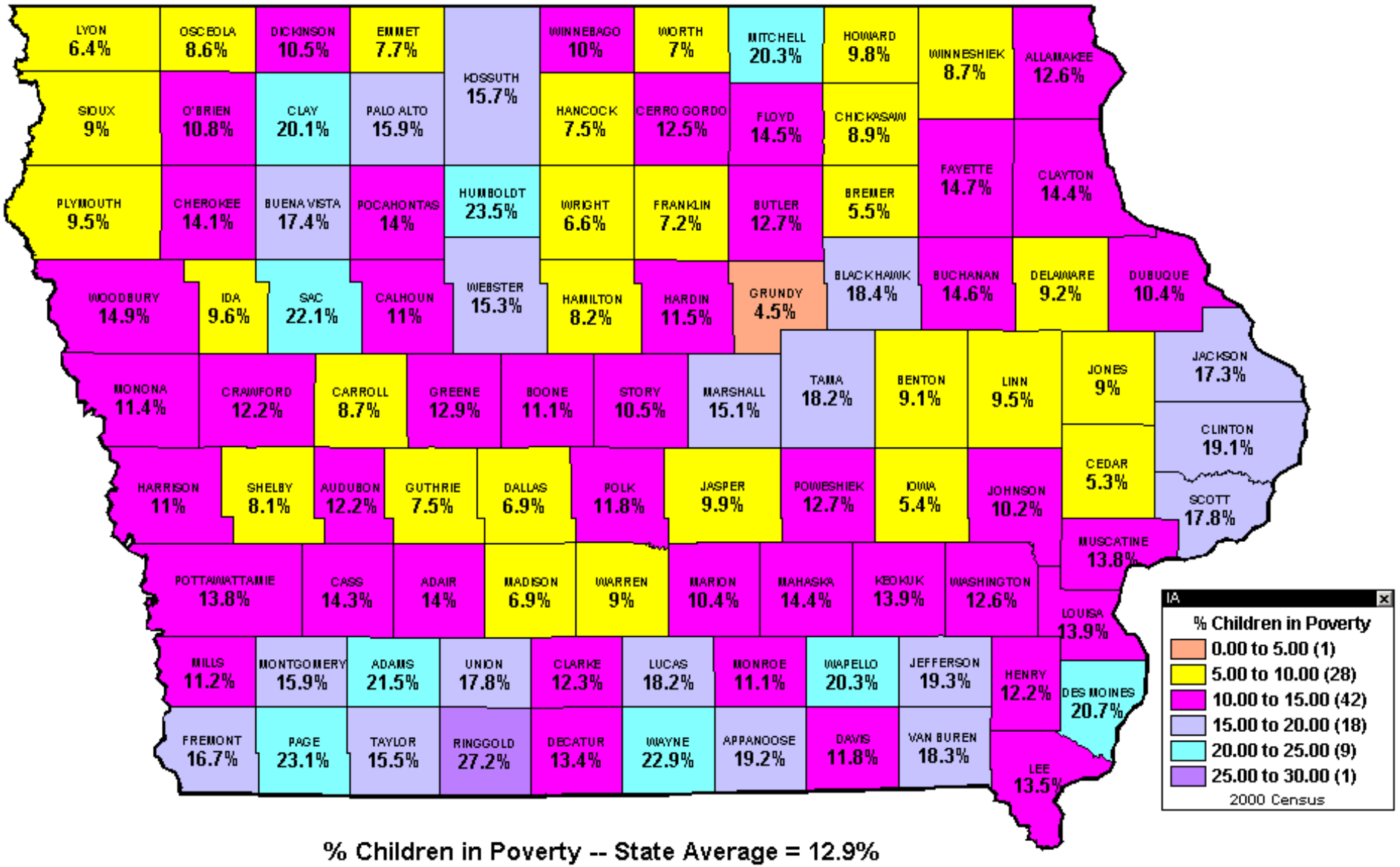
% Pre-1950 Housing -- State Average = 39.3%

Demographic Data on Children: Race/Ethnicity, Income, and Age

The CDC says that demographic data showing the race/ethnicity, income and age of children should be used to develop the blood lead testing plan. The map on page 30 shows the minority population for the state of Iowa and for each county. The map on page 31 shows the percentage of children under the age of 6 years living in poverty for the state of Iowa and for each county. The CDC says that data showing the prevalence of lead poisoning in children aged 12 to 35 months should be used to develop the blood lead testing plan. These data were previously shown on pages 16 to 19 of this document.



Combined % Minority and Hispanic Population -- State Average = 7.8%



% Children in Poverty -- State Average = 12.9%

Data on the Presence of Other Sources of Lead

Several other sources of lead have contributed to a small number of cases in Iowa. These sources include take-home exposure when the parents work with lead, candy imported from Mexico and Southeast Asia, and miniblinds. In the Iowa counties with a large number of immigrants, many children are found to be lead-poisoned shortly after coming to the United States. These children were exposed to lead from paint, gasoline, and industrial sources in their native countries. Their exposure may continue when they come to the United States because they often live in older housing. In some cases, they are relocated to safe housing, but their blood lead levels increase after they return to their native countries to visit.

Blood Lead Testing Capacity

The CDC says that the committee should also examine information about the state's blood lead testing capacity in developing the state blood lead testing plan. The committee should consider the following items:

- Health department organization and capacity to oversee blood lead testing. The IDPH and the 70 counties that have local childhood lead poisoning prevention programs have the organization and capacity to oversee blood lead testing. Many of the 29 counties that do not have local programs would develop programs if funding were available.
- Current blood lead testing activity. Iowa laboratories currently analyze approximately 60,000 blood lead samples each year. The two public health laboratories have the capacity to increase greatly the number of samples analyzed by adding personnel to perform analyses during additional shifts.
- Capacity to collect and analyze blood lead testing data. The data analyses contained in this document demonstrate that the IDPH has the capacity to collect and to analyze blood lead testing data.
- Child health care delivery systems and patterns. The IDPH Child Health Program works to ensure that child health care services are available to every child. The IDPH Childhood Lead Poisoning Prevention Program works closely with the Child Health Program, and many local agencies that are part of the childhood lead poisoning prevention program are also contractors for the child health program.
- Enrollment of children in Medicaid managed care. In calendar year 1999, Iowa had 66,079 children under the age of 6 years enrolled in Medicaid. This is 28.6 percent of children under the age of 6 years. Fifty percent of Iowa Medicaid enrollees are covered by a managed care plan, while the other 50 percent are covered by a fee-for-service plan. Because most health care providers are providers for private insurance, Medicaid fee-for-service, and Medicaid managed care organizations, changing to managed care does not usually require a change in provider. The only exception would be if the child has received service from a Title V Child Health Clinic. In this case, the child may have to start seeing a private provider if the Medicaid managed care organization chooses not to contract with the Title V Child Health Clinic.
- Health department capacity to support private providers of blood lead testing. The IDPH and the 70 counties that have local childhood lead poisoning prevention programs have

demonstrated the capacity to support private providers by providing information and care coordination/case management services.

- Health department capacity to provide blood lead testing for children without other access to care. In the 70 counties where local lead poisoning prevention programs exist, the local agencies can test or arrange for testing of children without other access to care. The IDPH has set aside approximately $100,000 each year to pay for the blood lead analysis for children who do not have Medicaid or another source of payment for the analysis. These funds have not been completely used during the three years that they have been available. If local programs can be started in the 29 counties that do not have them, a local agency can provide the testing, and IDPH has the funds to pay for the analysis if there is no other source of payment.

DETERMINE THE BOUNDARIES OF THE RECOMMENDATION AREAS

The committee determined that the boundaries of the recommendation area should be set after considering the data. For example, if the data show a widespread and homogeneous risk of lead poisoning throughout the state, then a single recommendation should be made for the entire state of Iowa. If a block of counties show a different pattern of risk, a recommendation could possibly be made for a group of counties. In general, the committee did not support making a recommendation based on zip code unless a large, contiguous area of zip codes showed a different pattern of risk from the rest of the state. .

DECIDE ON APPROPRIATE BLOOD LEAD TESTING

In 2000, the IDPH recommended that the committee use a cut-off of 11.5 percent of children aged 12 to 35 months with blood lead levels greater than or equal to 10 µg/dL since this was the actual number generated by the CDC cost-benefit analysis. This was also the national average of children with blood lead levels greater than or equal to 10 µg/dL. In addition, based on earlier guidance from the CDC, the IDPH recommended that the committee consider the following cut-off levels equivalent to the cut-off of 11.5 percent greater than or equal to 10 µg/dL:

Greater than or equal to 15 µg/dL	3.5 percent
Greater than or equal to 20 µg/dL	1.8 percent
Greater than or equal to 25 µg/dL	0.6 percent

The prevalence criterion was met if the prevalence was greater than or equal to any one of these cut-off percentages, the prevalence criterion was met. All but 13 counties met the prevalence criterion for universal blood lead testing.

In 2000, the IDPH recommended that the committee use a cut-off of greater than or equal to 26.9 percent of pre-1950 housing since this was the actual national average. All but two counties met meet the housing criterion for universal blood lead testing. In addition, all but two of Iowa's 99 counties (Johnson and Warren) met the criterion for universal blood lead testing.

In 2004, the IDPH recommended that the Child Health Team use a cut-off of 2.9 percent of children aged 12 to 35 months with blood lead levels greater than or equal to 10 µg/dL. CDC has not reported a current national average for the percentage of children aged 12 to 35 months with blood lead levels greater than or equal to 10 µg/dL. The current national average for the

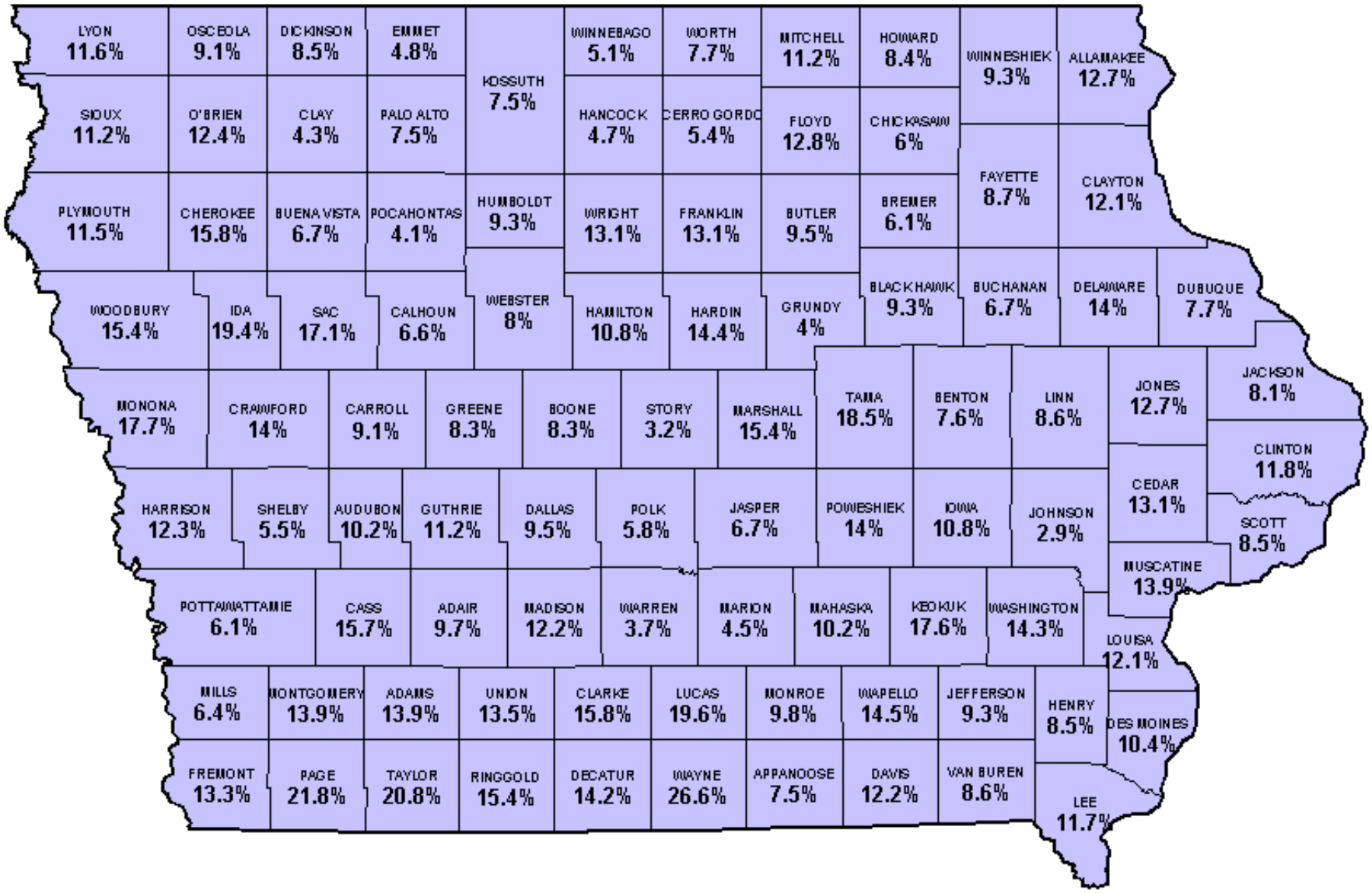
percentage of children under the age of 6 years with blood lead levels greater than or equal to 10 µg/dL is 2.2 percent. In the past, the national percentage of children aged 12 to 35 months with blood lead levels greater than or equal to 10 µg/dL has been approximately 1.3 times the national average of children under the age of 6 years with blood lead levels greater than or equal to 10 µg/dL. Therefore, the current national average of children aged 12 to 35 months with blood lead levels greater than or equal to 10 µg/dL can be estimated as 1.3 times 2.2 percent, or 2.9 percent.

The prevalence criterion was met if the prevalence was greater than or equal to any one of these cut-off percentages, the prevalence criterion was met. All of Iowa's 99 counties meet the prevalence criterion for universal blood lead testing.

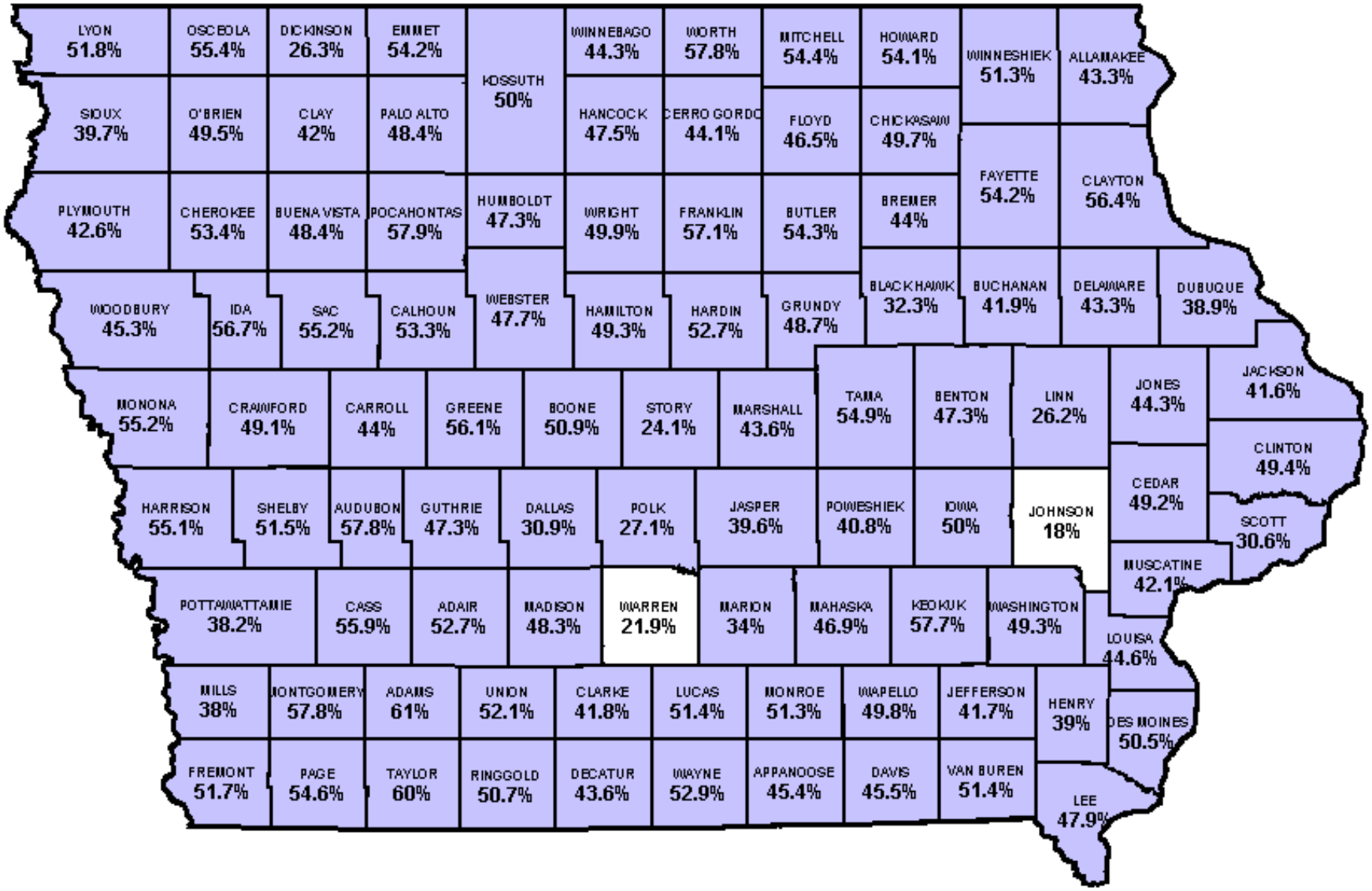
In 2004, the IDPH recommended that the committee use a cut-off of greater than or equal to 22.3 percent of pre-1950 housing since this is the current national average. All but two counties meet the housing criterion for universal blood lead testing.

In summary, all of Iowa's counties meet the criterion for universal blood lead testing.

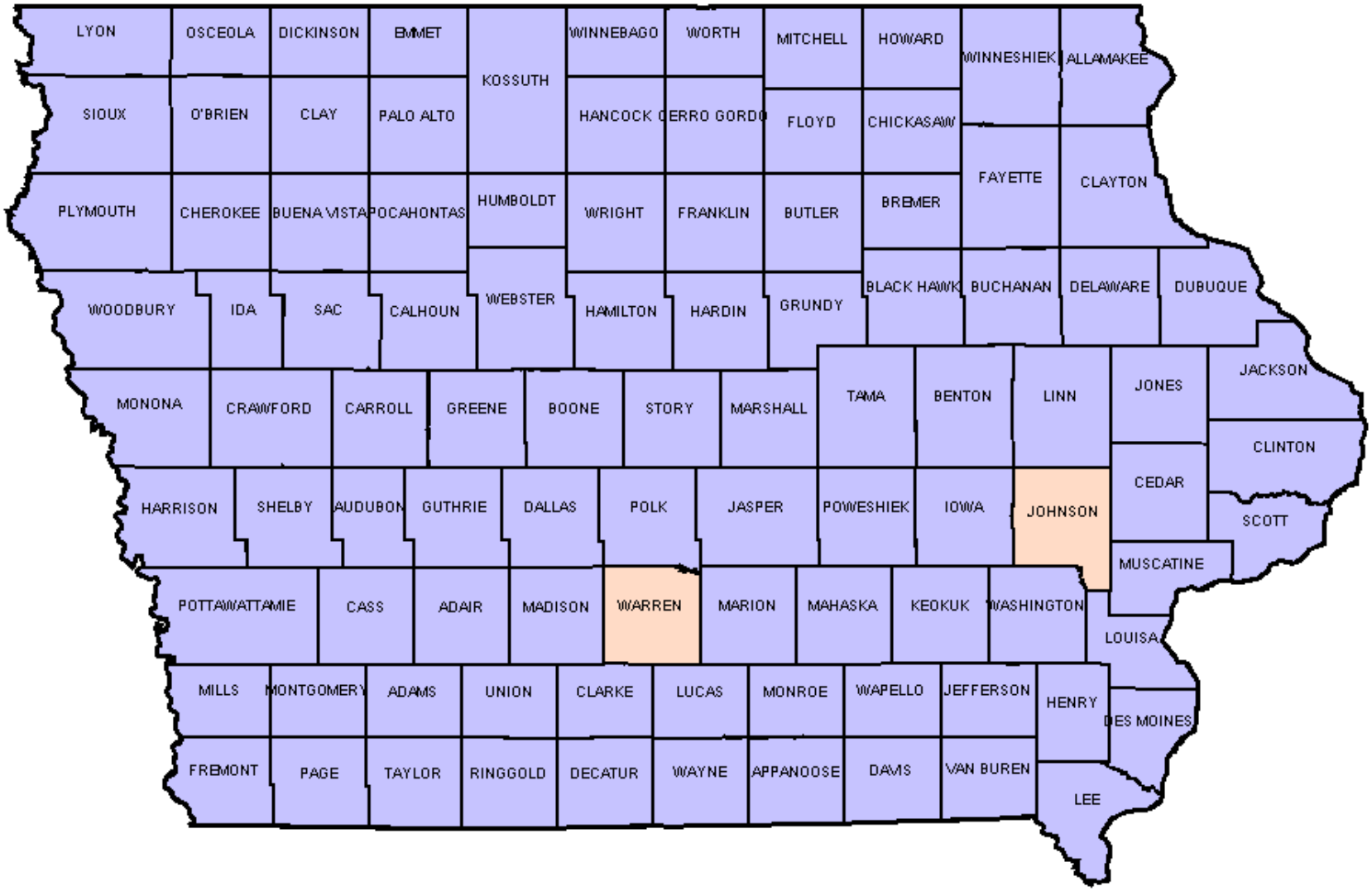
The map on page 35 shows the counties that meet the 2004 criterion for universal blood lead testing based on prevalence of elevated blood lead levels. The map on page 36 shows the counties that meet the 2004 criterion for universal blood lead testing based on the percentage of pre-1950 housing. The map on page 37 shows the counties that meet one or both criterion for universal blood lead testing.



Counties Where Percent Children Identified as Lead-Poisoned is Greater than the National Average



Counties with Greater than the National Average of Pre-1950 Housing



Counties Meeting One Criterion for Universal Blood Lead Testing

Counties Meeting Both Criteria for Universal Blood Lead Testing

Zip Code Data

In 2000, the committee also examined housing data on a zip code basis. The proportion of pre-1950 housing is less than 26.9 percent in only 30 zip codes that represent less than 10 percent of the housing units in Iowa. The committee concluded that if only one county or a few zip codes could be designated as targeted blood lead testing, it would be better to continue to do universal screening throughout the state. In 2004, housing data show that the proportion of pre-1950 housing is less than the national average of 22.3 percent in only 60 out of Iowa's 946 zip codes. The Child Health Team concluded that it was still not practical to designate only a small number of zip codes as areas for targeted blood lead testing.

Healthy Iowans 2010

The committee also reviewed the objectives and action steps for childhood lead poisoning that are found in the Environmental Health chapter of *Healthy Iowans 2010*. The Environmental Health chapter team had previously recommended universal blood lead testing and had incorporated this recommendation into Healthy Iowans 2010. The objectives and action steps for childhood lead poisoning prevention in *Healthy Iowans 2010* may be found on pages 53 to 56 in the Appendix.

Conclusion

In 2000, the committee recommended that universal blood lead testing be continued throughout the entire state of Iowa. In addition, the advisory committee recommended that the Iowa General Assembly pass legislation to require that all children show proof of a blood lead test before entry to school or to licensed daycare. The committee felt that, considering Iowa's high rate of childhood lead poisoning and the fact that only 37 percent of children were being tested after eight years of childhood lead poisoning efforts, required testing would be a good way to quickly increase the number of children tested for lead poisoning. The Iowa General Assembly will consider this recommendation during its 2001 session.

In 2004, the Child Health Team felt that Iowa's housing issues alone provided the rationale for continuing universal blood lead testing.

WRITE BLOOD LEAD TESTING RECOMMENDATIONS

The current IDPH blood lead testing recommendation consists of first determining through the use of the questionnaire on page 40 whether a child is at "high risk" or "low risk" for childhood lead poisoning. "High risk" children should be tested at the ages of 12, 18, and 24 months, and 3, 4, and 5 years. "Low risk" children should be tested at the ages of 12 and 24 months. If a provider does not wish to assess risk, the child should be classified as "high risk." The committee felt that many providers were accustomed to this schedule and that it might be confusing to change the schedule. The Iowa Department of Human Services regulations for the Early Periodic Screening, Diagnosis, and Treatment (EPSDT) program contain this schedule. All of the manuals written for the EPSDT program also contain this schedule. Although this is more testing than is recommended by the CDC, the committee felt that it was currently justified in Iowa for the following reasons:

1. The prevalence of blood lead levels among children tested does not begin to drop until children reach the age of 3 to 4 years.
2. One would expect that children would be tested at the age of 12-35 months, and if identified with an elevated blood lead level, older siblings would then be tested. Unfortunately, the IDPH is now finding the opposite. Children are being tested at entry to preschool or head start and identified at an older age. This then leads to testing and identification of younger children. While it is often not possible to prevent further damage from lead exposure when a lead-

poisoned child is identified at the age of 4 to 5 years, the committee felt that it would useful for parents and teachers to know if a child had been lead-poisoned before the child started school.

3. The committee felt that the 18-month test was important in high-risk children in Iowa because children's blood lead levels often increase significantly in the summer. The IDPH and local lead poisoning prevention programs have observed that about four to six weeks after it gets warm enough for children to play outside and for windows to be open, the blood lead levels of children who were already identified can go up. In addition, a large number of new cases are reported. In a number of cases, children's blood lead levels have been less than 10 µg/dL in December/January at the age of 12 months and have increased to 30 µg/dL at the age of 18 months in July/August. Therefore, the 18-month test is very important in Iowa.

The committee noted that the prevalence of lead poisoning among Iowa children who are covered by Medicaid is approximately twice that of children who were not covered by Medicaid. Data is not available to show the prevalence of lead poisoning children covered by the Healthy and Well Kids in Iowa (HAWK-I) child health insurance program. However, the committee felt that the prevalence among these children is probably similar to the prevalence among children covered by Medicaid. Since these children are at very high risk for lead poisoning and a source of payment is available, it is important to stress blood lead testing for these children. However, since other Iowa children are also at high risk for lead poisoning, it is important that providers also test these children.

Blood Lead Testing Recommendation

All testing will be done using a blood lead test. Testing may be done using a capillary or venous test. The questionnaire on page 40 will be used to determine whether a child is at "high" risk or "low" risk for lead poisoning. If the parents answer "yes" or "I don't know" to any of the questions, the child will be considered to be at high risk and tested according to the high risk schedule. If the parents answer "no" to all of the questions, then the child is considered to be at low risk and tested according to the low risk schedule. The screening questionnaire must not be used to determine whether or not to test a child, but only to determine the testing schedule. If a provider does not wish to take time to assess risk, then the provider must test all children according to the high-risk schedule. The schedules for blood lead testing for "high" and "low" risk children are shown in the chart on page 41.

IOWA DEPARTMENT OF PUBLIC HEALTH
CHILDHOOD LEAD POISONING RISK QUESTIONNAIRE

Date _____

Name _____

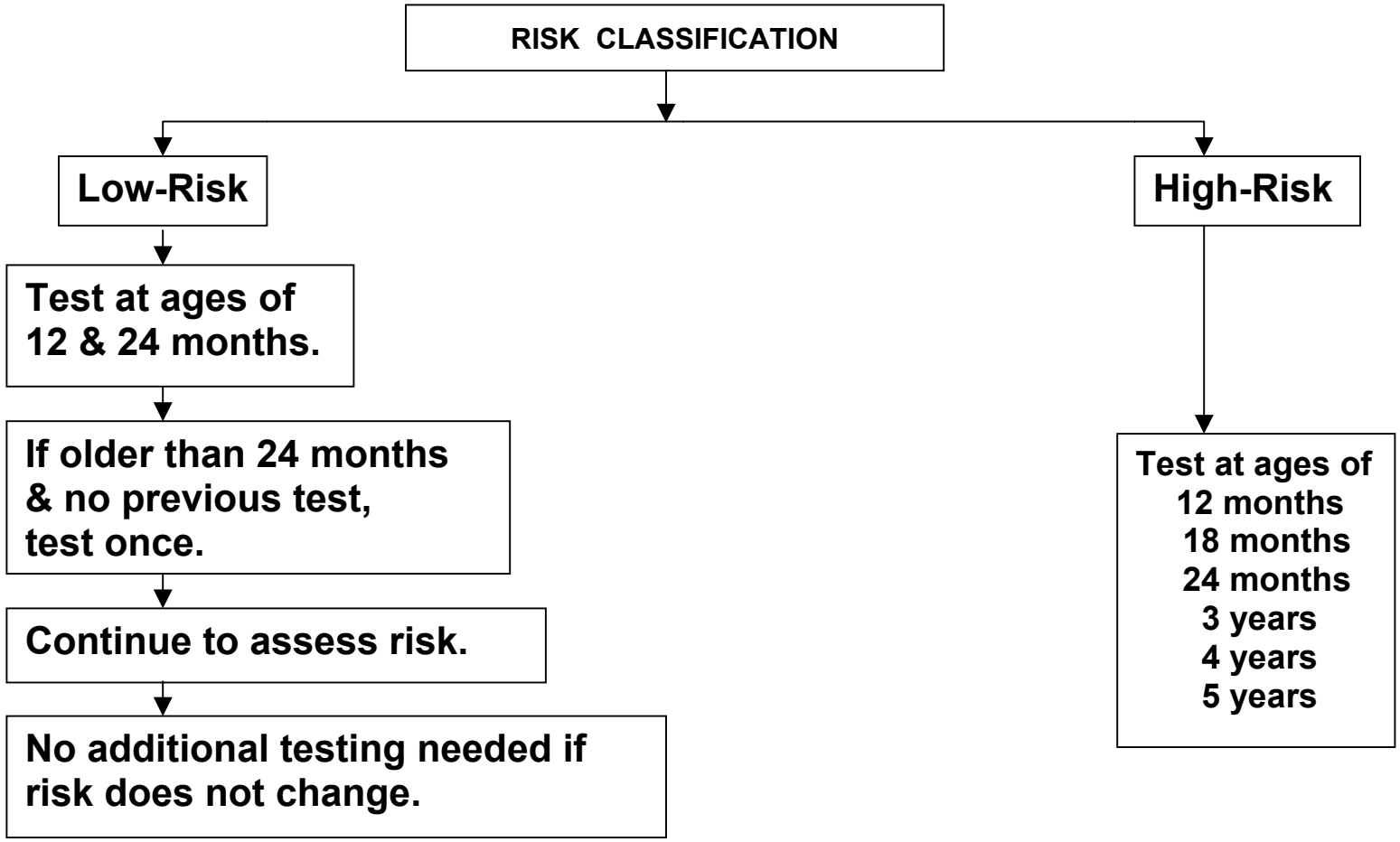
Address _____

Date of Birth _____

If the answer to <u>any</u> of these questions is "yes," the child is considered to be at high risk for lead poisoning and must be screened according to the high-risk screening schedule. If the parent does not know the answer to a question, the answer should be assumed to be "yes." This questionnaire should be reviewed at each regular visit. Write additional dates that the questionnaire is reviewed in the blank for "date" and note any changes to the answers.

1.	Has your child **<u>ever</u>** lived in or regularly visited a house built before 1960? (Examples: home, day-care center, baby-sitter, relative's home)	Yes	No
2.	Have you noticed any peeling or chipping paint in or around the pre-1960 house that your child has lived in or regularly visited?	Yes	No
3.	Is the pre-1960 home that your child has lived in or regularly visited been remodeled or renovated by: A. Stripping, sanding, or scraping paint on the inside or outside of the house. B. Removing walls and/or tearing out lath and plaster.	Yes	No
4.	Does your child eat non-food items such as dirt?	Yes	No
5.	Have any of your other children or their playmates had lead levels >= 15 μg/dL?	Yes	No
6.	Does your child live with or frequently come in contact with an adult who works with lead on the job or in a hobby? (Examples: painter, welder, foundry worker, old home renovator, shooting range worker, battery plant worker, battery recycling worker, ceramics worker, stained glass worker, sheet metal worker, scrap metal worker, plumber.)	Yes	No
7.	Does your child live near a battery plant, battery recycling plant, or lead smelter?	Yes	No
8.	Do you give your child any home or folk remedies? (Examples: azarcon, greta, pay-loo-ah)	Yes	No
9.	Does your child eat candy that comes from Mexico or is purchased from a Mexican grocery store?	Yes	No
10.	Has your child ever lived in or Mexico, Central America, South America, Africa, Asia, or eastern Europe, or visited one of these areas for a period longer than two months?	Yes	No

BASIC LEAD TESTING CHART
(Based on Risk and Age)



Follow-up of Elevated Blood Lead Tests

All capillary blood lead levels greater than or equal to 15 micrograms per deciliter must be confirmed with venous blood lead measurements. Confirmatory testing will be done according to the chart on page 43.

Children with capillary or venous blood lead levels of 10 to 14 µg/dL should receive follow-up services according to the chart on page 44.

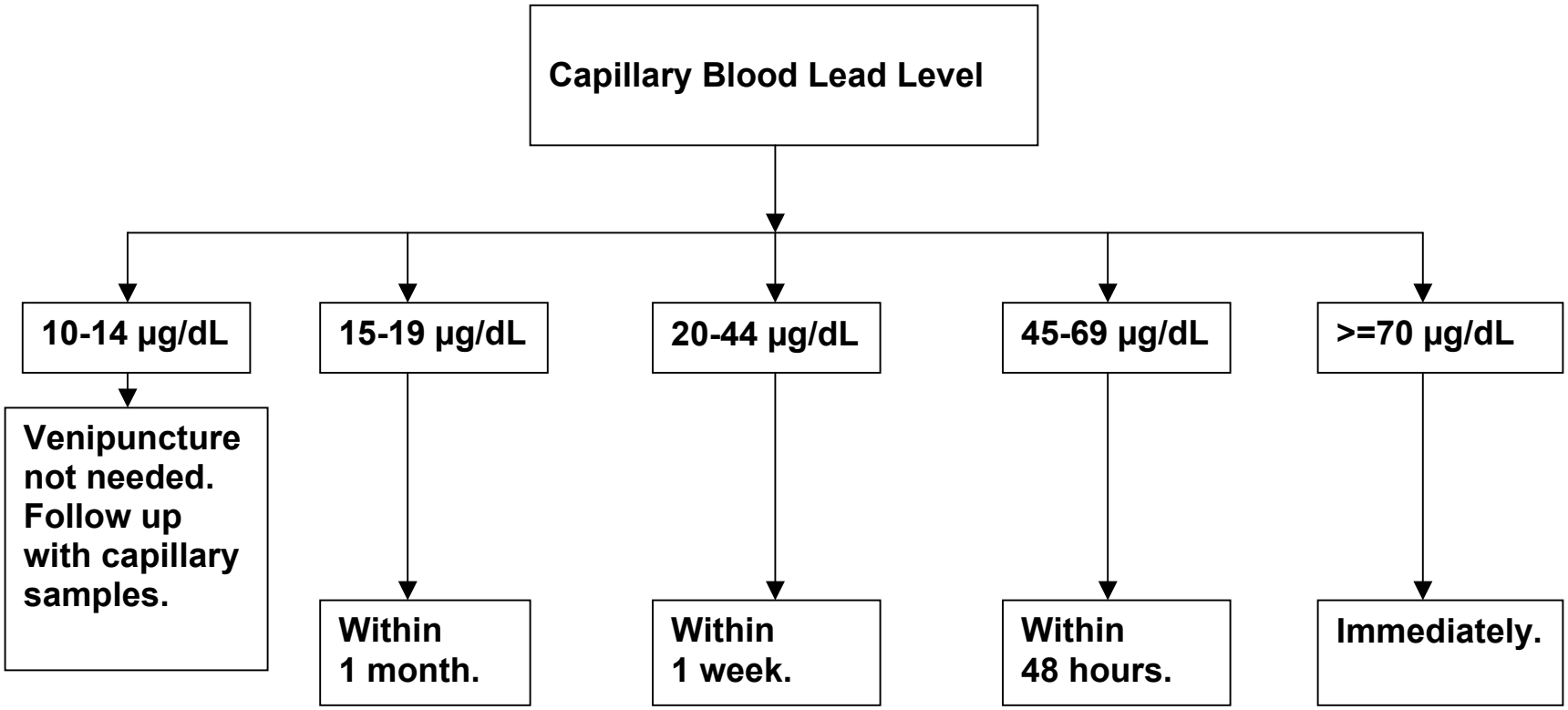
Children with venous blood lead levels of 15 to 19 µg/dL should receive follow-up service according to the chart on page 45.

Children with venous blood lead levels greater than or equal to 20 µg/dL should receive follow-up service according to the chart on page 46.

The chart on page 47 shows the timelines for providing medical, developmental, and nutritional follow-up services.

The chart on page 48 shows the timelines for providing environmental follow-up services.

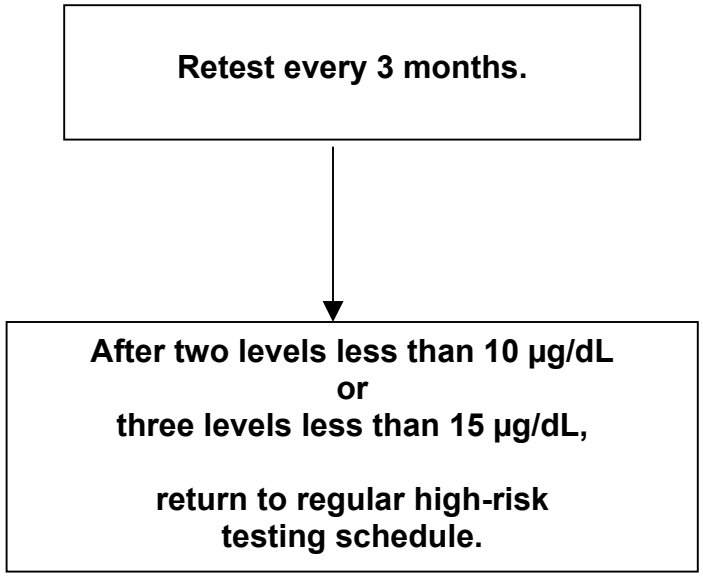
SCHEDULE FOR OBTAINING CONFIRMATORY VENIPUNCTURES



If venous level <9 µg/dL, return to regular screening schedule.
If venous level 10-14 µg/dL, follow chart for levels of 10-14 µg/dL.
If venous level 15-19 µg/dL, follow charts for levels of 15-19 µg/dL.
If venous level >=20 µg/dL, follow chart for levels >=20 µg/dL

Revised 9/2000

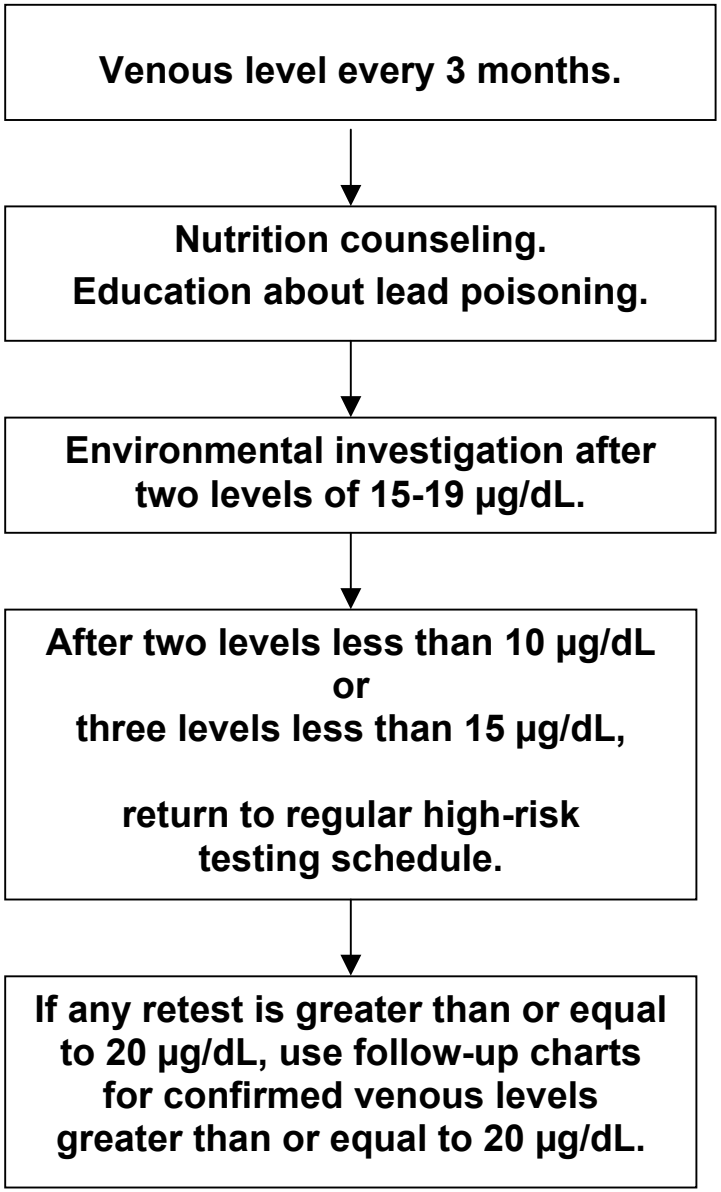
FOLLOW-UP OF ELEVATED BLOOD LEAD LEVELS (10-14 µG/DL)



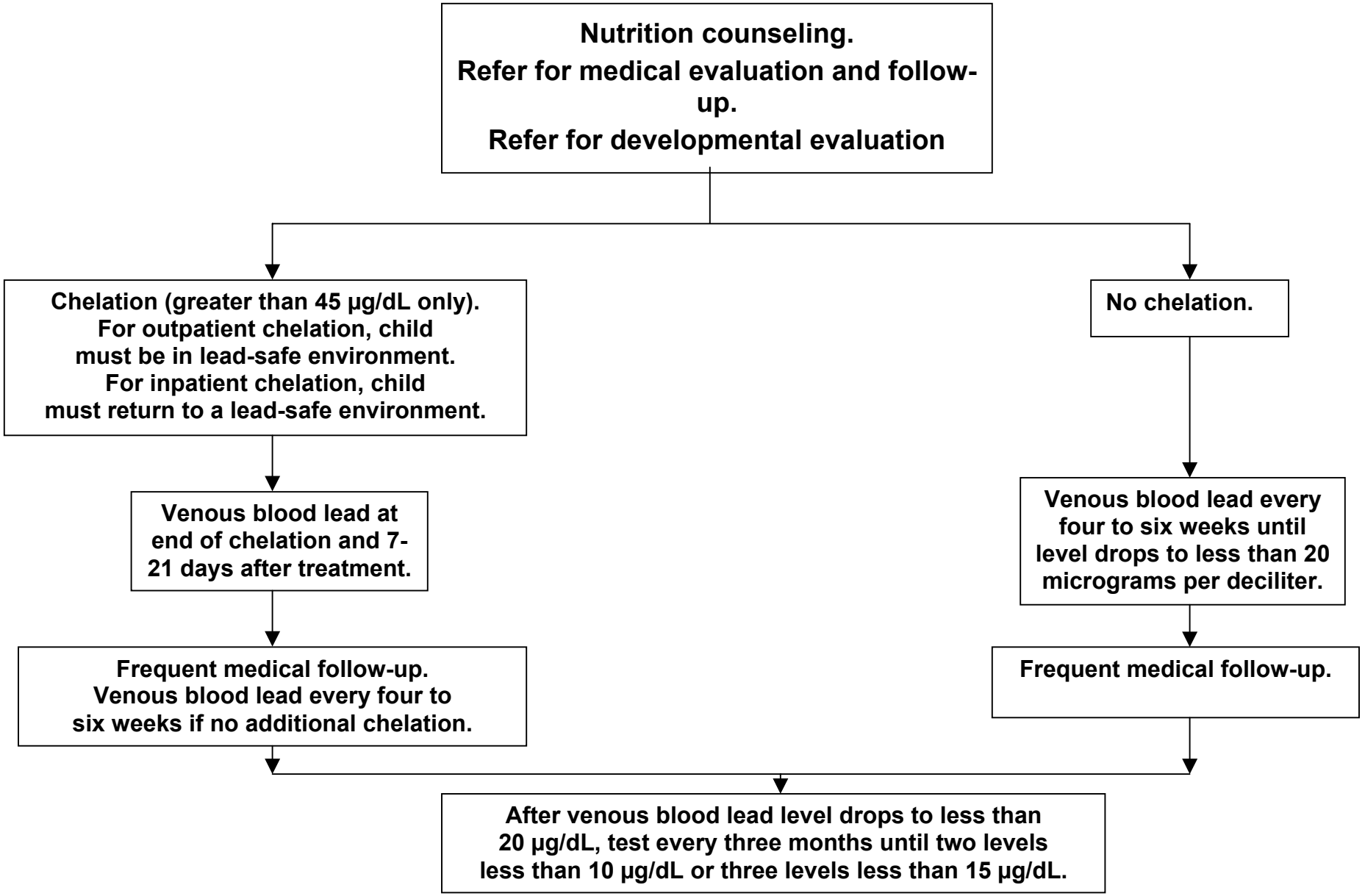
If any capillary retest is greater than or equal to 15 µg/dL, follow confirmatory venipuncture schedule.

If any venous retest is greater than or equal to 15 µg/dL, follow charts for confirmed venous levels.

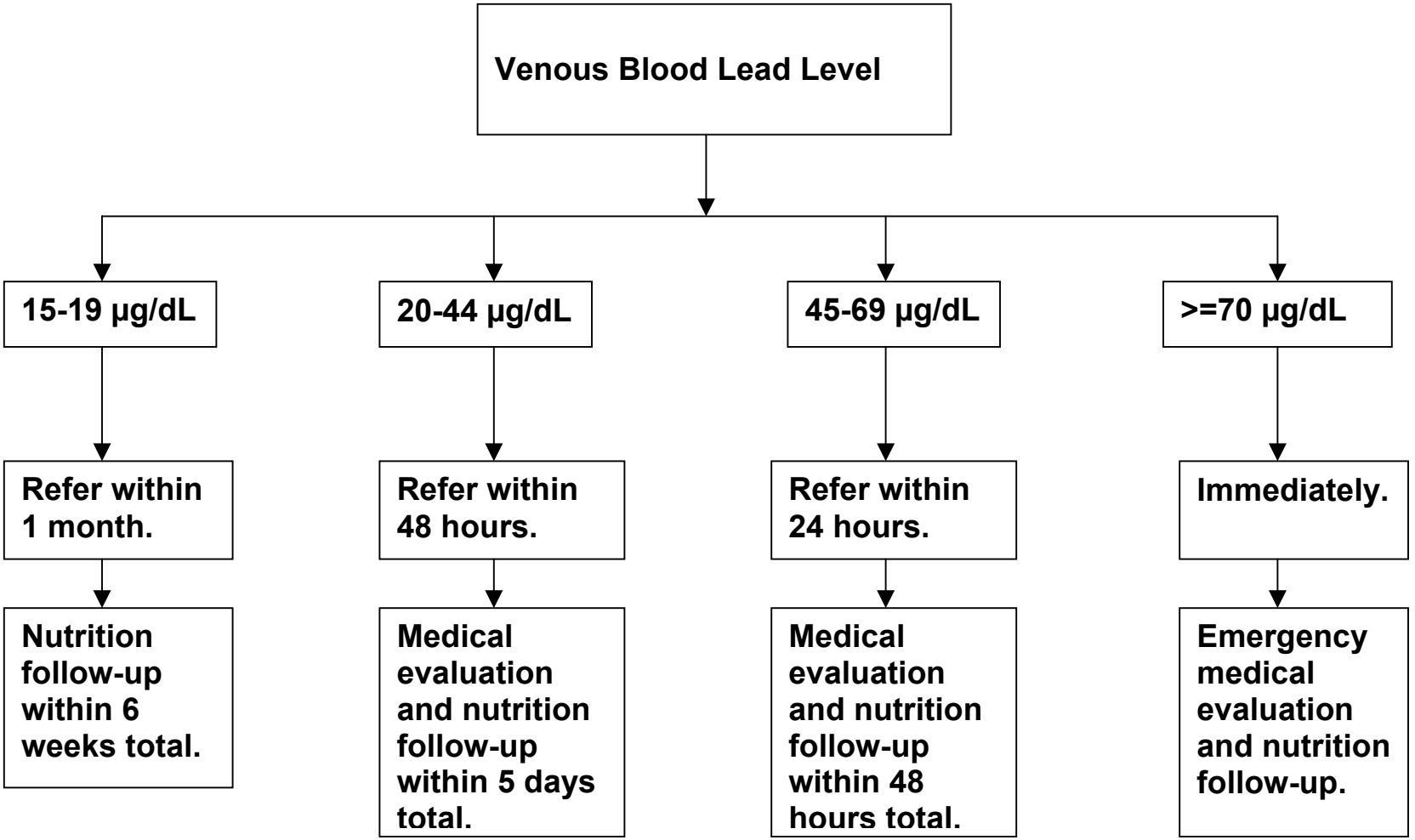
FOLLOW-UP OF ELEVATED VENOUS BLOOD LEAD LEVELS (15-19 µG/DL)



FOLLOW-UP OF ELEVATED VENOUS BLOOD LEAD LEVELS (Greater than or equal to 20 µg/dL)



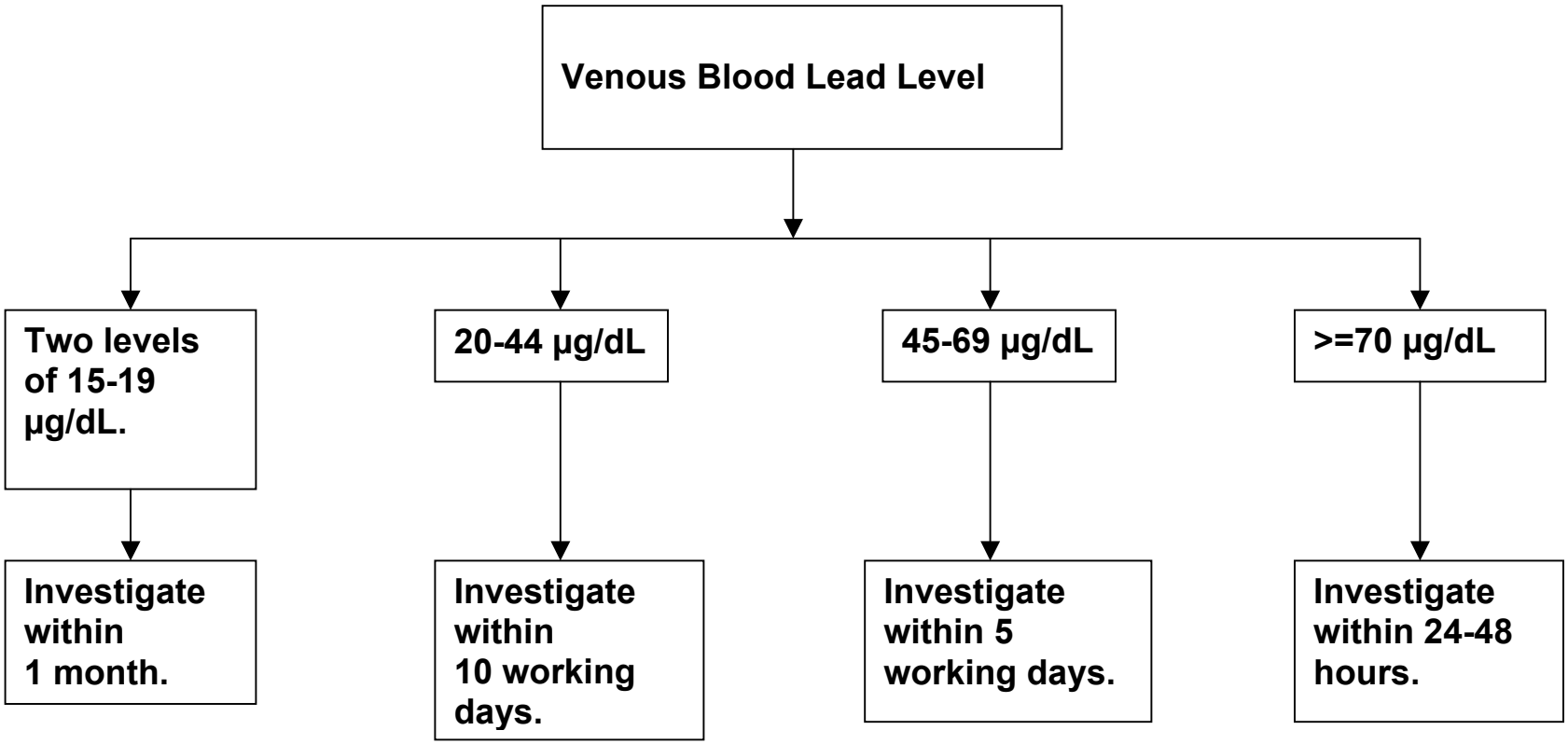
TIMELINES FOR MEDICAL, DEVELOPMENTAL,* AND NUTRITIONAL FOLLOW-UP



*Note that developmental evaluation is expected only for children with venous blood lead levels greater than or equal to 20 µg/dL.

Revised 9/2000

TIMELINES FOR ENVIRONMENTAL FOLLOW-UP



Revised 9/2000

IMPLEMENT THE STATEWIDE PLAN

The CDC says that it is up to state health officials and their advisors to ensure that:

- Staff members of state and local public health agencies understand their roles as established by the statewide plan.

- Health-care providers, medical groups, managed-care organizations, and parents know what type of testing is recommended for their communities.

- Other parties affected by the plan, including the state Medicaid agency, private insurers, and policy makers, are involved in the implementation process.

- The plan is monitored, evaluated, and revised as appropriate.

Roles of State and Local Public Health Agencies

This plan does not substantially change the role of state and local health agencies in Iowa. However, the IDPH Childhood Lead Poisoning Prevention Program will ensure that other staff of the IDPH and staff of local agencies understand this statewide blood lead testing. The Lead Program already works closely with staff of the Title V Child Health program, Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), and the public health nursing program as well as with local agencies.

Providers and Parents Know About Recommendation

One parent who served on Iowa's advisory committee told of her struggle to get her children tested for lead poisoning. Her children's physician did not feel that the children were at risk, even though they lived in an older home. The mother persisted until she found a physician who would test her children. On the other hand, a physician who served on the committee spoke of being frustrated when parents did not want to have blood drawn from the child. Both physicians and public health agencies related that many parents do not seek well-child care for their children after the required childhood immunizations are completed. To implement the universal blood lead testing recommendation, both parents and providers must be educated about the risk of lead poisoning their communities. In addition, parents must be educated about the importance of continuing well-child care for their children.

The IDPH and local agencies in the 70 counties with local childhood lead poisoning prevention programs already provide a significant amount of outreach and education for parents and providers. These efforts will continue and will be reinforced by asking the Iowa Medical Society, Iowa Osteopathic Medical Society, Iowa Chapter of the American Academy of Family Practice, and the Iowa Academy of Family Practice to educate their members about the recommended blood lead testing plan. In addition, the insurance companies that served on the advisory committee have offered to educate their providers. The IDPH has materials available to explain how providers should conduct the testing and how to access follow-up services for lead-poisoned children. In addition, the IDPH has brochures that physicians can use for parent education. The IDPH will work with the Iowa Farm Bureau Women, a statewide group that offered to help in educating the public

about childhood lead poisoning. The IDPH will continue to work with the Title V Child Health program and its local contractors in their efforts to increase the number of children receiving well-child care.

Affected Parties Are Involved in Implementation

The IDPH, Iowa Department of Human Services (state Medicaid agency), and Iowa managed-care organization have already been working increase the testing of Medicaid children. The Iowa Department of Human Services (IDHS) modified state EPSDT regulations to require that Medicaid children receive blood lead testing according to the schedule recommended by the IDPH and to provide Medicaid reimbursement for environmental investigations. IDHS includes a requirement for blood lead testing in its managed care contracts.

The IDPH Title V Child Health program is doing the following:

- Requiring Title V child health contractors to assure that their clients, both Medicaid and non-Medicaid, receive blood lead testing, regardless of whether the contractor provides direct services or contracts with physicians for service.
- Providing the names of Medicaid children who have not yet received a blood lead test to the Title V child health contractors so that the contractors can contact the family to arrange for blood lead testing.
- Providing the names of providers who have billed for EPSDT screens without ordering a blood lead test to Title V child health contractors so that the contractors can educate them regarding the requirement that a blood lead test be included in the EPSDT screen.

The HAWK-I Board has provided written assurance that blood lead testing is a covered service for children enrolled in the program.

The WIC Program allows WIC contractors to collect a blood sample from WIC clients for lead testing so long as funds are available from a source other than WIC to pay for the laboratory analysis and for the time needed to collect the blood sample. In addition, the WIC program encouraged WIC contractors to cooperate with local childhood lead poisoning prevention programs to ensure that WIC children receive blood lead testing.

Because of the advisory committee's work, IDHS will ask its contractor, the Iowa Foundation for Medical Care, to educate medical providers about Medicaid's blood lead testing requirement. In addition, the Medicaid managed-care organizations will increase their efforts to educate their providers about childhood lead poisoning.

Monitoring, Evaluation, and Revision of the Plan

As demonstrated by this document, the IDPH already collects blood lead level information on all Iowa children who are tested. As a result, IDPH can determine the number and location of children with elevated blood lead levels and map areas where blood lead testing is taking place and where it is not. IDPH provides this information to local childhood lead poisoning prevention programs, the Title V Child Health Program,

the WIC program, public health nursing agencies, and IDPH. As a result, all of these agencies have targeted education, outreach, and funding to areas where blood lead testing rates are low. In the future, IDPH will regularly provide this information to insurance companies, Medicaid managed-care organizations, and health-care providers.

As additional blood lead surveillance data, IDPH will consult with advisory committee members regarding the need to revise the recommendation of universal blood lead testing throughout the state of Iowa.

APPENDIX

HEALTHY IOWANS 2010

CHILDHOOD LEAD POISONING

GOAL STATEMENT

Reduce the prevalence of blood lead levels greater than or equal to 10 micrograms/deciliter (µg/dL) to 4% of children under the age of 6 years. (Baseline: Data gathered from mandatory reporting of blood lead testing from 1992-1998 shows an estimated 12.6% of Iowa children under the age of 6 years have blood lead levels of 10 micrograms per deciliter (µg/dL) or greater.)

RATIONALE

Lead is a poison affecting virtually every system of the body, and lead poisoning is the single most preventable childhood disease. The Center for Disease Control (CDC) estimates that 20% of children with blood lead levels greater than 20 µg/dL will need special education. According to the CDC, childhood lead exposure costs the United States billions of dollars from medical and special education costs for poisoned children and decreased future earnings of these children.

The rate of lead poisoning among Iowa children under the age of 6 years is approximately three times the national average. One child out of seven tested in Iowa is lead-poisoned.

HEALTH EFFECTS	BLOOD LEAD LEVELS	IOWA PERCENT OF LEAD POISONING	NATIONAL AVERAGE
Learning Disabilities	10 µg/dL*	12.6%	4.4%
Developmental Problems (hearing & growth) Lower IQ's	15 µg/dL	4.8%	1.3%
Nerve Problems	20 µg/dL	1.5%	0.4%
Slower Reflexes Kidney Problems Brain Damage (at very high levels)	25 µg/dL	0.9%	0.0%

*Note: µg/dL = micrograms per deciliter

Source: Centers for Disease Control and Prevention and the Iowa Department of Public Health

From July 1992 - December 1997, 13 children had venous blood lead levels greater than or equal to 70 µg/dL, which is considered a medical emergency and can result in brain swelling, coma, and convulsions. Highest venous blood lead level reported was 360 µg/dL in an 18-month-old child.

The IDPH recommends that all children under the age of 6 years be tested for lead poisoning. However, this is not currently being done due to lack of funds and education in the medical community.

According to the 1990 census, Iowa has approximately 230,746 children under the age of 6 years.

Approximately 23,000 Iowa children (10%) are currently screened each year for lead poisoning. Approximately 200,000 children under the age of 6 years in Iowa are not screened for lead. Each year, an additional 30,000 Iowa children may have undiagnosed lead poisoning, based on the current lead poisoning rate of 12.6%

The primary route of lead exposure to children is through deteriorating and/or accessible lead-based paint. Eliminating lead-based paint hazards will aid in prevention of future lead poisoning.

The single largest contributor to the childhood lead poisoning problem in Iowa is the current housing stock, which is one of the oldest in the nation.

Data from inspections done by the IDPH and local Childhood Lead Poisoning Prevention Programs (CLPPPs) show that virtually all pre-1950 homes in Iowa contain some lead hazards.

Housing data from the 1990 census show that 42.9 percent of the housing in Iowa (488,375 units) was built before 1950. This is substantially greater than the national average of 26.9%.

Iowa ranks sixth among the 50 states in the percentage of housing units built prior to 1950. In 90 of Iowa's 99 counties, the proportion of housing built prior to 1950 ranges from 40% to 60%.

Locally staffed programs will be able to supply more timely and effective environmental and medical case management to lead-poisoned children as well as provide education about lead poisoning prevention. No two communities have the same set of problems or same resources to address these problems. Therefore, communities are better equipped to identify and address the problems faced by their residents.

Local health departments have reported increased screenings from local education and coalition efforts, based on a 1998 survey by the IDPH lead program. Increasing coalition presence within the community and providing education to groups focusing on children's

issues will increase overall community awareness of the problem and lead to primary prevention of lead poisoning.

ACTION STEP 1

Initiate additional local childhood lead poisoning prevention programs and continue to support existing programs across the state of Iowa so that, by January 1, 2005, these programs will be available in all 99 counties in Iowa. (Baseline: These programs currently serve 66 counties.)

ACTION STEP 2

Increase the number of children tested for lead poisoning so that by January 1, 2005, all Iowa children under the age of 6 years receive blood lead testing at the appropriate intervals for each child's risk. Data from the STELLAR (Systematic Tracking of Elevated Lead Levels and Remediation) database indicate that 10% of Iowa children under the age of 6 years are currently tested for lead poisoning each year; increased testing can be accomplished by the following activities:

- Educate physicians and other screening providers by current and additional local programs, and by sending a yearly reminder to physicians.

- Educate parents; childcare providers; social workers; nutrition outreach workers; public health nurses; leaders of minority, immigrant, and refugee populations; and other groups that have frequent contact with children.

- Implement a required lead test for children entering childcare; currently, a pre-entrance exam is required for all children entering a child care facility; the IDPH is developing a prototype of the physical exam form, including lead poisoning screening; the form would be distributed to childcare providers and included in the childcare provider handbook. (An IDPH action step)

ACTION STEP 3

Adopt by January 1, 2001 a model regulation for lead hazard remediation in the case of a lead-poisoned child, using the authority of *Iowa Code* 135.105B, which other cities and counties could adopt; and increase by July 1, 2002, the number of counties that have adopted such a regulation to include eventually all 99 counties; 10 counties have adopted such a regulation to date. (An IDPH action step)

ACTION STEP 4

Increase the completion rate for lead hazard removal so that by January 1, 2005, 90% of homes with lead hazards, that are associated with a lead-poisoned child, will be treated within six months of hazard identification. (Data from the STELLAR database indicate that treatment is completed within six months for 25% of the homes in which hazards are identified.) (An IDPH action step)

ACTION STEP 5

Develop a matching grant program, by January 1, 2005, to aid families in covering the costs of treating lead hazards in their homes. (An IDPH action step)

ACTION STEP 6

Increase community awareness of lead poisoning and community involvement in primary prevention activities by:

- Having local programs increase the number of coalitions dealing with childhood lead poisoning to cover all 99 counties and increasing to 25% the percentage of citizen (non-government or healthcare employees) involvement by January 2005. (Coalition and minorities, immigrant, and refugee populations currently serve 41 of 99 counties with citizen involvement at approximately 5%).

- Providing visual risk assessment education to social worker; childcare providers; nutrition outreach workers; leaders of minority, immigrant, and refugee populations; and other groups who routinely visit homes with children.

- Supporting the development and implementation of Farm*A*Syst/Home*A*Syst, an assessment program, using appropriate language and cultural sensitivity;

Additional state funds of $600,000 per year would be needed to accomplish these five objectives. Funds would be needed to cover:

1. Start-up and continuing costs for local programs.
2. The costs of environmental and medical case management for children identified as lead-poisoned.
3. Costs for blood lead testing for children with no other source of payment.
4. To pay for education and outreach to physicians, housing inspectors, social workers, parents, and homeowners regarding screening and primary prevention of childhood lead poisoning.

ACTION STEP 7

Utilize the Stellar data system to record the race or ethnic background of lead poisoned children and initiate a system to identify immigrant and refugee children who are lead-poisoned so a baseline can be established by the year 2005. (An IDPH action step)